PIONEER
The Art of Entertainment

Service Manual

• KEH-M6300/EW

ORDER NO.
CRT1383

MULTI-CD CONTROL FM/MW/LW TUNER DECK AMPLIFIER

KEH-M6300 EW, IT

KEH-M6300SDK WG

MULTI-CD CONTROL FM/AM TUNER DECK AMPLIFIER

KEH-M6200 UC

KEH-M6250 ES

Note:

- **See the separate manual CX-197 (CRT1328) for the cassette mechanism description.**
- **Dolby noise reduction manufactured under license from Dolby Laboratories Licensing Corporation. "Dolby" and the double-D symbol are trademarks of Dolby Laboratories Licensing Corporation.**

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SAFETY INFORMATION (UC MODEL)

CAUTION

This service manual is intended for qualified service technicians; it is not meant for the casual do-it-yourselfer. Qualified technicians have the necessary test equipment and tools, and have been trained to properly and safely repair complex products such as those covered by this manual.
Improperly performed repairs can adversely affect the safety and reliability of the product and may void the warranty. If you are not qualified to perform the repair of this product properly and safely, you should not risk trying to do so and refer the repair to a qualified service technician.

WARNING

Lead in solder used in this product is listed by the California Health and Welfare agency as a known reproductive toxicant which may cause birth defects or other reproductive harm (California Health & Safety Code, Section 25249.5). When servicing or handling circuit boards and other components which contain lead in solder, avoid unprotected skin contact with the solder. Also, when soldering do not inhale any smoke or fumes produced.

SPECIFICATIONS (KEH-M6300/EW)

General

Power source ..... 14.4 V DC (10.8 – 15.6 V allowable)
Grounding system ..... Negative type
Max. current consumption ..... 4.5 A
Dimensions (chassis) ..... 180 (W) x 50 (H) x 150 (D) mm
(front face) ..... 188 (W) x 58 (H) x 19 (D) mm
Weight ..... 1.5 kg

Amplifier

Maximum power output ..... 25 W x 2 (EIAJ)
Continuous power output ..... 11 W x 2 (1% dist. at 1 kHz)
Load impedance ..... 4 Ω (4 – 8 Ω allowable)
Max. output level/output impedance (preout)
..... 500 mV/1 kΩ
Tone controls (bass) ..... ±10 dB (100 Hz)
(treble) ..... ±10 dB (10 kHz)
Loudness contour ..... +12 dB (100 Hz), +7 dB (10 kHz)
(Volume: –30 dB)

Tape player

Tape ..... Compact cassette tape (C-30 – C-90)
Tape speed ..... 4.76 cm/sec. (+0.14 cm/sec., –0.05 cm/sec.)
Fast forward/rewind time ..... Approx. 100 sec. for C-60
Wow & flutter ..... 0.13 % (WRMS)
Frequency response ..... Metal: 40 – 17,000 Hz (±3 dB)
Stereo separation ..... 45 dB
Signal-to-noise ratio
..... Metal: Dolby B NR IN: 63 dB (IEC-A network)
..... Dolby NR OUT: 55 dB (IEC-A network)

FM tuner

Frequency range ..... 87.5 – 108 MHz
Usable sensitivity ..... 11 dBf (1.0 µV/75 Ω, mono, S/N: 30 dB)
50 dB quieting sensitivity ..... 16 dBf (1.7 µV/75 Ω, mono)
Signal-to-noise-ratio ..... 70 dB (IEC-A network)
Distortion ..... 0.3 % (at 65 dBf, 1 kHz, stereo)
Frequency response ..... 30 – 15,000 Hz (±3 dB)
Stereo separation ..... 40 dB (at 65 dBf, 1 kHz)

MW tuner

Frequency range ..... 531 – 1,602 kHz
Usable sensitivity ..... 18 µV (25 dB) (S/N: 20 dB)
Selectivity ..... 50 dB (±9 kHz)

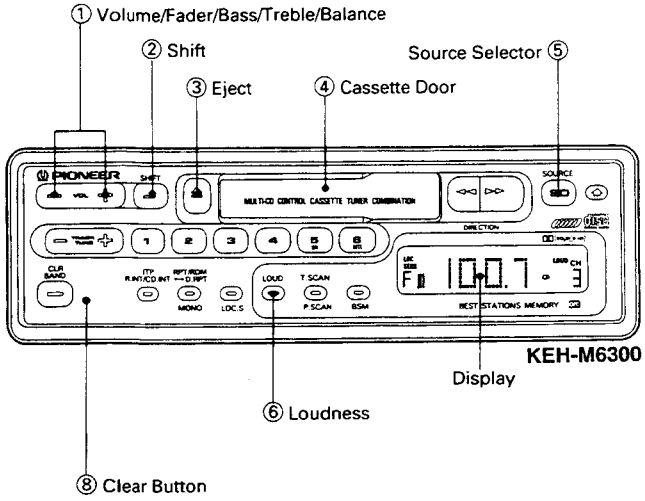
LW tuner

Frequency range ..... 153 – 281 kHz
Usable sensitivity ..... 30 µV (30 dB) (S/N: 20 dB)
Selectivity ..... 50 dB (±9 kHz)

Note:

Specifications and the design are subject to possible modification without notice due to improvements.

2. ADJUSTING VOLUME AND TONE



Using the Clear Button

Once all wiring is complete, press button ⑧ with a thin, pointed object. Though not a normal occurrence, the microprocessor which controls the operation of this unit can be affected by electrostatic noise. This generally is indicated by such symptoms as no power being supplied when you switch the unit on, failure of buttons and controls, or an abnormal display. Should this happen, press button ⑧ with a thin, pointed object to reset the microprocessor.

Switching Power On

Radio

Press button ⑤ to switch the tuner power on. Press button ⑤ again to switch the power off.

Tape

Insert the cassette tape through the Cassette Door ④, and the power will be automatically turned on to get the tape start being played back. To eject the tape, press the button ③.

Changing the Source

When the cassette tape is inserted, the source changes at each press of the button ⑤: Tape — Radio — OFF. When a Multi-Play CD player — optionally available Multi-Play CD Player CDX-M40, for example — is connected to your unit, the source changes: Multi-Play CD Player — Tape — Radio — OFF.

Adjusting Volume/Fader/Bass/Treble/Balance

To adjust volume, press the button ①. The display changes at each press of the button ②: Volume — Fader — Bass — Treble — Balance. Press the button ① to adjust the displayed mode.

Adjusting Volume

Pressing the (+) side of button ① increases the volume, while the (–) side decreases it.

Adjusting the Fader

KEH-M6300:

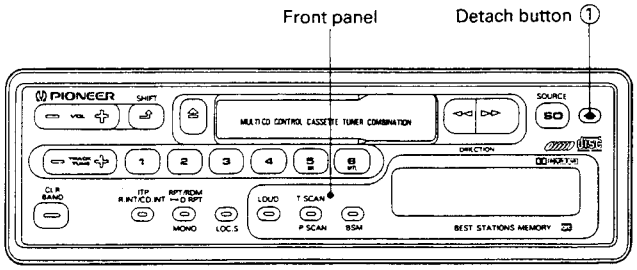
This function controls the balance between the front and rear speakers of a 4-speaker system. Pressing the (–) side of button ① shifts the balance to the front speakers, while the (+) side shifts it to the rear speakers. In the case of a 2-speaker system, set the display to **"F-R0"** (or **"F–F0"**).

1. USING THE REMOVABLE FRONT PANEL

The front panel of this unit can be removed to prevent theft.

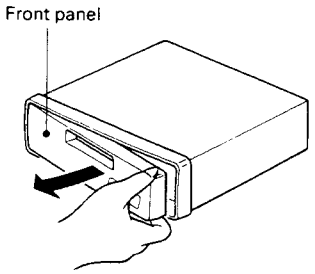
Detaching the Front Panel

1. Press button ①, and the right-hand side of the panel will eject.



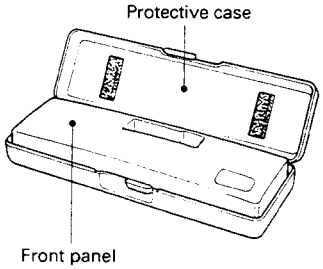
KEH-M6300

2. To remove the front panel, pull its right-hand side toward you.



- Take care not to put pressure on the display or drop the front panel.

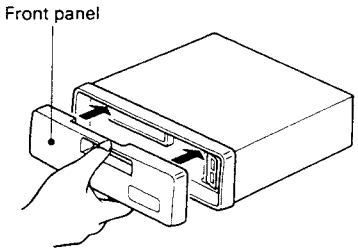
3. Enclose for safekeeping the front panel that is removed in the supplied protective case.



Replacing the Front Panel

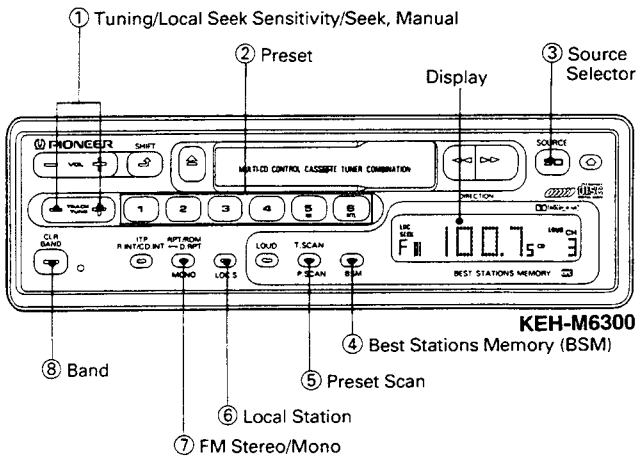
Push the front panel into the main body.

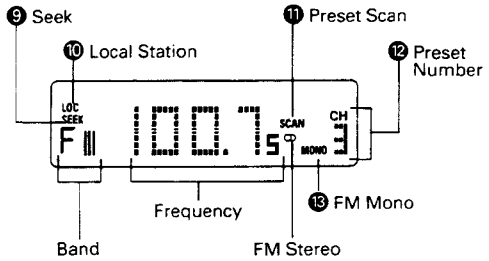
- When replacing the front panel, do not put pressure on the display or control buttons.



- Note that if the front panel is not attached correctly, pushing button ① may not release the panel, and the other control buttons may not function.

3. USING THE RADIO





1 Press button ③ to switch the radio power on.

2 Press button ⑧ to select a band.

F I → F II → F III → M/L
(FM1) (FM2) (FM3) (MW/LW)
Use Button ① to switch betwen MW (531–1,602 kHz) and LW (153-281 kHz).

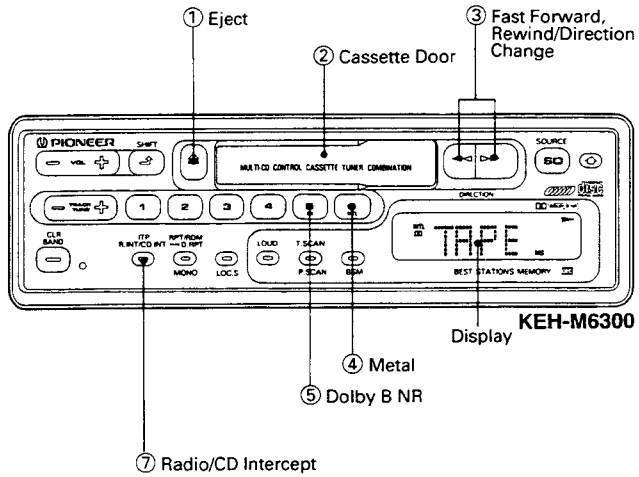
3 Use seek tuning to tune in a frequency.
Confirm that the SEEK indicator ⑨ is shown on the display (if not, press the (+) and (–) sides of button ① at the same time). Press the (+) side of button ① to automatically tune in the next higher receivable frequency, and the (–) side for a lower frequency.

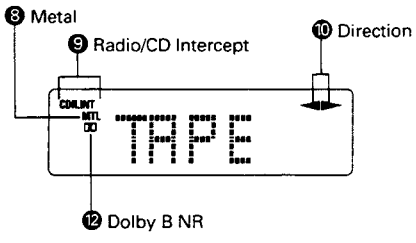
4 Adjust volume and tone

5 Assign the tuned frequency to one of the buttons in Bank ② (preset memory).
Press and hold down one of the button in Bank ② for at least two seconds. The frequency is assigned to the selected button when the preset number ⑫ stops flashing on the display. Up to 18 FM stations (6 each for FM1, FM2 and FM3), and six MW/LW stations can be assigned to the preset memory buttons in Bank ②.

6 Once a frequency is assigned to a button in Bank ②, you just need to press that button to tune it in.
This also causes the number of the button pressed to appear at position ⑫ on the display.

4. USING THE TAPE DECK





1 Insert the cassette tape into the slot ②, and power will be turned on and the tape begin being played back.
At this time, the tape running direction indicator ⑪ will light up.

2 Adjust volume and tone

3 To eject the cassette tape, press the button ①.

- A loose or warped label on a cassette tape may interfere with the eject mechanism of the unit or cause the cassette to become jammed in the unit. Avoid using such tapes or remove such labels from the cassette before attempting use.
- Do not try to eject the cassette immediately after insertion, as it will cause malfunction. Wait a few seconds.

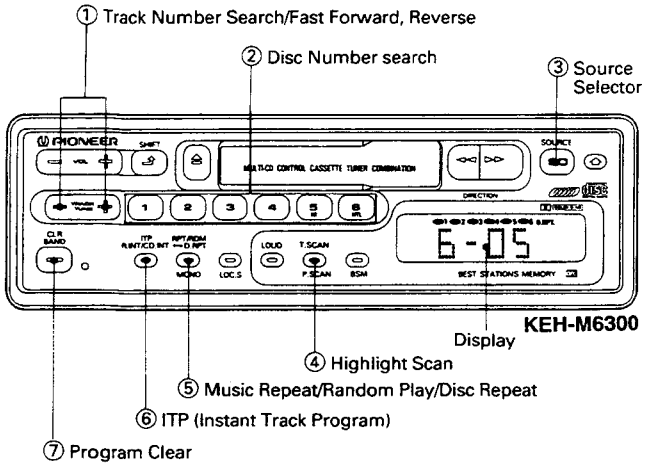
Changing Program

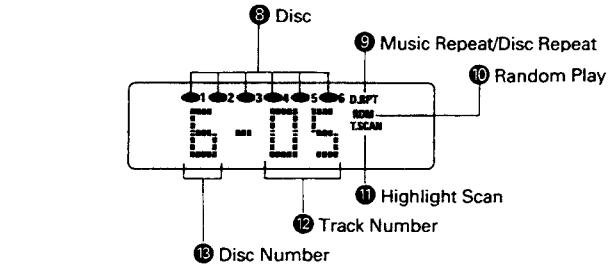
Push the fast forward and rewind buttons ③ together to switch from one side of the tape to the other (from Side A to Side B or vice versa).

Using Fast Forward and Rewind

Since the transport can be in either direction, both the left and right high-speed tape transport buttons ③ can be regard as fast forward/rewind buttons.
For fast forward, press the high-speed tape transport button ③ that corresponds to the direction that is shown by the direction indicator ⑩.
When the end of the tape is reached, playback will automatically begin from the opposite side of the tape (Auto-reverse).
For rewind, press the button ③ that is opposite that of the direction shown by the direction indicator ⑩. When the end of the tape is reached, playback will automatically begin from the beginning of the same side of the tape (Auto-replay).
Fast forward and rewind can be terminated by pressing the respective opposite high-speed tape transport button ③.

5. PLAYING COMPACT DISCS





1 Press button ③ to change the display to the Multi-Play CD player mode and to begin disc play.
Each press of button ③ changes the mode as follows:
Multi-Play CD player — Tape — tuner — OFF

2 Use the Disc Number Search function to select a disc.
Select the desired disc by pressing one of the buttons in Bank ②. The number of the disc selected appears at position ⓭ on the display.

- Display ❽ indicates whether the magazine is loaded or empty.
- If the number at position ⓭ on the display does not change when you press a button in Bank ②, it means that there is no disc loaded in that tray.

3 Use Track Number search to select a track.
Confirm that Track Number is shown at Position ⓬ on the display.
If not, press the (+) and (–) sides of button ① at the same time. Press the (+) side of button ① to increase the number at Position ⓬, or the (–) side to decrease the number. Holding either side of button ① down changes the track number at high speed.

4 Adjust volume and tone

5 To stop disc play, press button ③.
At another press, the normal play resumes from about where it stopped.

- If you stopped operating a Multi-Play CD Player CDX-M100 in the middle of music and then restarted, the player resumes playing from the very beginning of the selection with which you stopped.

6. BLOCK DIAGRAM

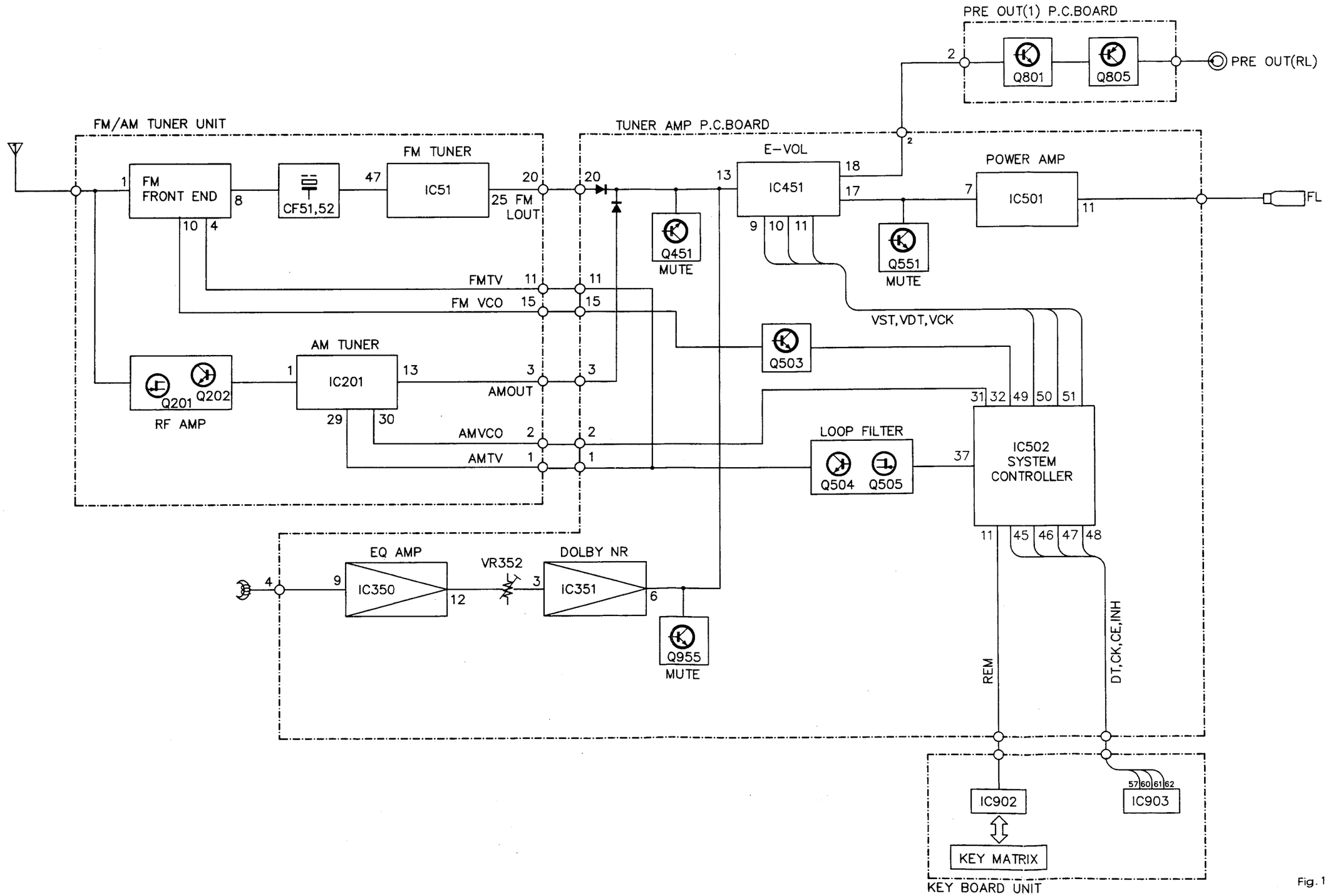


Fig. 1

7. DISASSEMBLY

● Removing the case
1. Insert and turn a screwdriver at locations indicated by arrows to remove the case.

● Removing the grille assy
1. Press the detach button, and then pull grille assy.

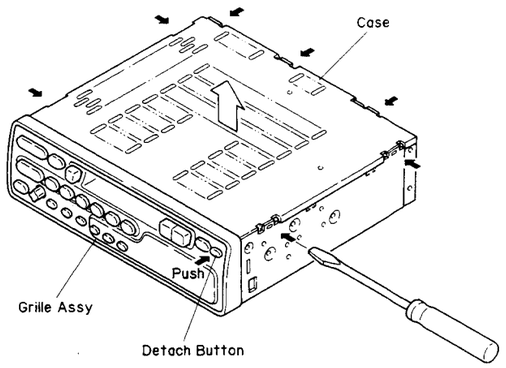


Fig. 2

● Removing the cassette mechanism assy
1. Remove the four screws.
2. Disconnect the connector.
3. Remove the cassette mechanism assy.

● Removing the panel assy
1. Remove the two screws.
2. Disconnect the connector.
3. Remove the panel assy.

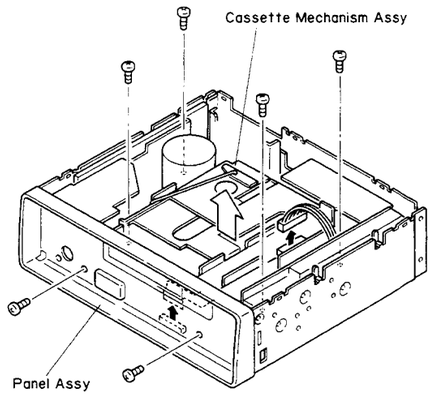


Fig. 3

● Removing the chassis unit
1. Remove the five screws.
2. Remove the antenna plug.
3. Remove the chassis unit.

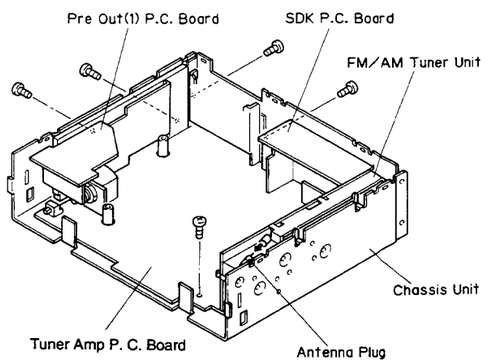


Fig. 4

8. ADJUSTMENT

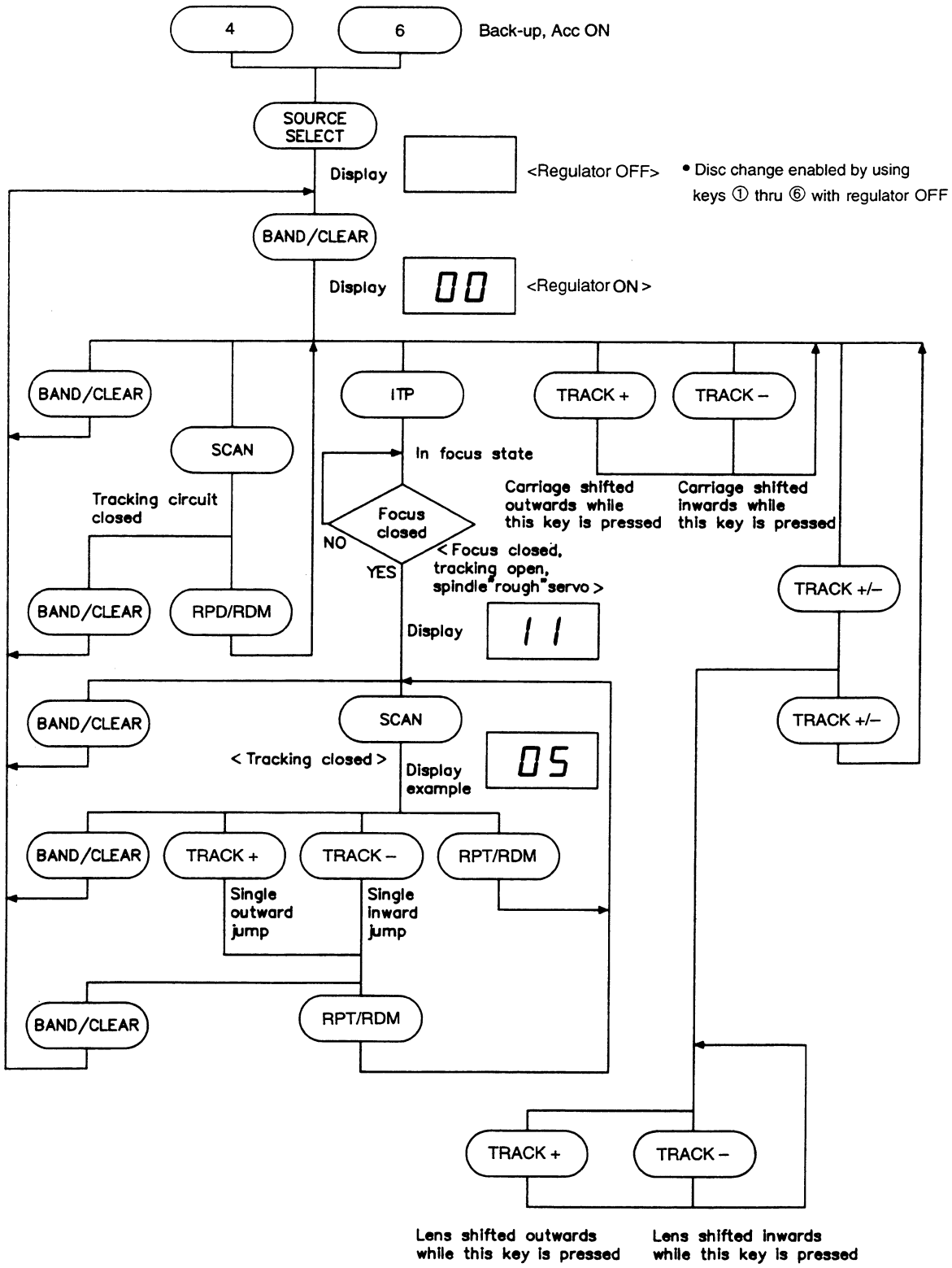
8. 1 TEST MODE

Test mode is mainly used in adjustment of CD multi-players.
● Switching to test mode
While pressing the 4, 6 keys together, switch the back-up and the ACC ON.
● Canceling test mode
While pressing the CD multi-player clear button, switch the this unit back-up and ACC OFF.
● Key functions during test mode
The CD multi-player, deck, and tuner are selected by the SOURCE button.
a) CD multi-player

key	Function
BAND/CLEAR	Regulator ON/OFF
TRACK +	FWD kick
TRACK -	REV kick
SCAN	Tracking close
RPT/RDM	Tracking open
ITP	Focus close
TRACK +/ -	Carriage/tracking switching

b) Deck and tuner
No corresponding function. Normal operation executed.

• Flow Chart


4
6
Back-up, Acc ON
SOURCE SELECT
Display
<Regulator OFF>
• Disc change enabled by using keys ① thru ⑥ with regulator OFF
BAND/CLEAR
Display
00
<Regulator ON>
BAND/CLEAR
ITP
TRACK +
TRACK –
SCAN
In focus state
Carriage shifted outwards while this key is pressed
Carriage shifted inwards while this key is pressed
Tracking circuit closed
Focus closed
NO
YES
< Focus closed, tracking open, spindle rough servo >
TRACK +/–
BAND/CLEAR
RPD/RDM
Display
11
BAND/CLEAR
SCAN
TRACK +/–
< Tracking closed >
Display example
05
BAND/CLEAR
TRACK +
TRACK –
RPT/RDM
Single outward jump
Single inward jump
BAND/CLEAR
RPT/RDM
TRACK +
TRACK –
Lens shifted outwards while this key is pressed
Lens shifted inwards while this key is pressed

8. 2 TUNER ADJUSTMENT

NOTICE:
Select C1 so that total capacity of 80pF is attained from the direction of the receiver jack.
Z: Output impedance of SSG.

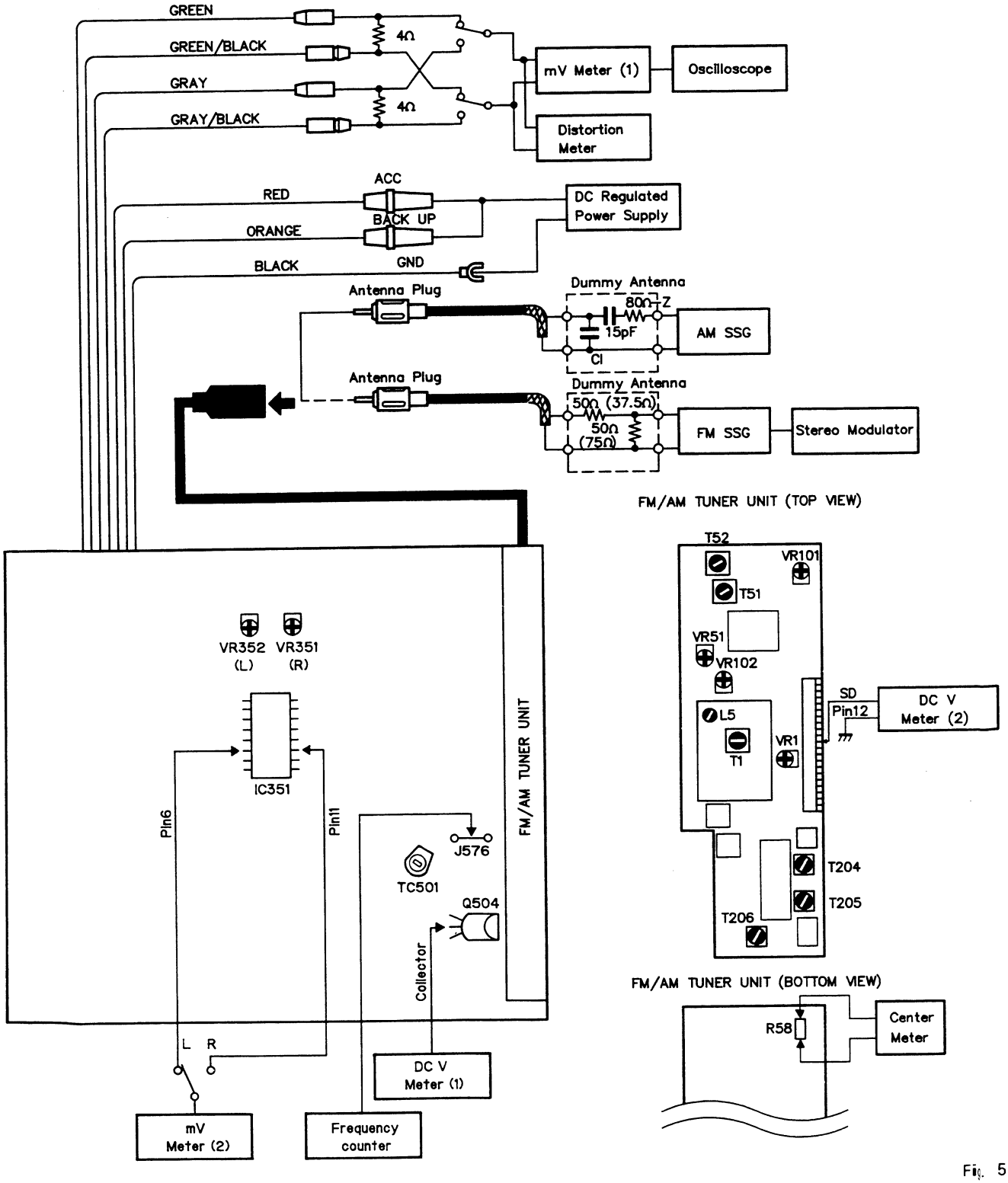


Fig. 5

FM ADJUSTMENT ※ Stereo MOD.: 1kHz, L+R=90%, Pilot=10%
*( ): EW, WG, ES, IT Model

	No.	FM SSG (400Hz, 100%)		Displayed Frequency (MHz)	Adjusting Point	Adjustment Method (Switch Position)
		Frequency (MHz)	Level (dBμV)			
IF	1	98.1	60	98.1	T51	Center Meter: 0
	2	98.1	60	98.1	T52	Distortion Meter: Minimum
	3	Repeat No. 1-2 alternately so that the center meter indicates the 0 output and distortion meter indicates minimum output.				
Front End	1			107.9 *(108)	L5	DC V Meter (1): 6.2±0.2V
	2			87.9 *(87.5)		Verify that DCV Meter (1) is more than 2.1±0.6V
	3	98.1	8	98.1	T1	Oscilloscope: Optimum Symmetry
	4	98.1※	60	98.1	T1	Distortion Meter: Minimum Rotate T1 less than±90°
Soft Mute	1	98.1	60	98.1		mV Meter (1): A dB
	2	98.1	9	98.1	VR102	mV Meter (1): A-3dB
ARC	1	98.1※	34	98.1	VR101	mV Meter (1): Separation 5dB
SD	1	98.1	15	98.1	VR51	DC V Meter (2): Approx. 5V
	2	98.1	14	98.1		Verify that DC V Meter (2) is approx. 0V.
	3	98.1	55	98.1	VR1	DC V Meter (2): Approx. 5V
		Connect collector of Q2 to GND. Connect DC regulated power supply to pin 3 of FM front end through resistor (330Ω). Add 4.3v from DC regulated power supply.				
	4	98.1	54	98.1		Verify that DC V Meter (2) is approx. 0V.

AM ADJUSTMENT (UC、ES model)

* ( ) : ES model when tuning step at 9kHz.

	No.	AM SSG (400Hz, 30%)		Displayed Frequency (kHz)	Adjusting Point	Adjustment Method (Switch Position)
		Frequency (kHz)	Level (dBμV)			
Tuning Volt	1			1,710 *(1,602)	——	Verify that DC V Meter (1) is less than 6.5V.
	2			530 *(531)	——	Verify that DC V Meter (1) is more than 2.0V.
IF	1	1,000 (999)	15	1,000 (999)	T204, 205, 206	mV Meter (1) : Maximum

MW/LW ADJUSTMENT (EW、WG、IT model)

	No.	AM SSG (400Hz, 30%)		Displayed Frequency (kHz)	Adjusting Point	Adjustment Method (Switch Position)
		Frequency (kHz)	Level (dBμV)			
Tuning Volt	1	(MW MODE)		1,602	——	Verify that DC V Meter (1) is less than 6.5V.
	2	(LW MODE)		153	——	Verify that DC V Meter (1) is more than 2.0V.
IF	1	999	20—25	999	T204, 205, 206	mV Meter (1) : Maximum

DOLBY NR ADJUSTMENT (EW、WG、IT model)

No.	Cassette Tape	Adjusting Point	Adjustment Method (Switch Position)
1	NCT-150 (400Hz, 200nwb/m)	VR352 (Lch) VR351 (Rch)	mV Meter (2) : -6dBs ± 1dB (DOLBY NR Switch: OFF)

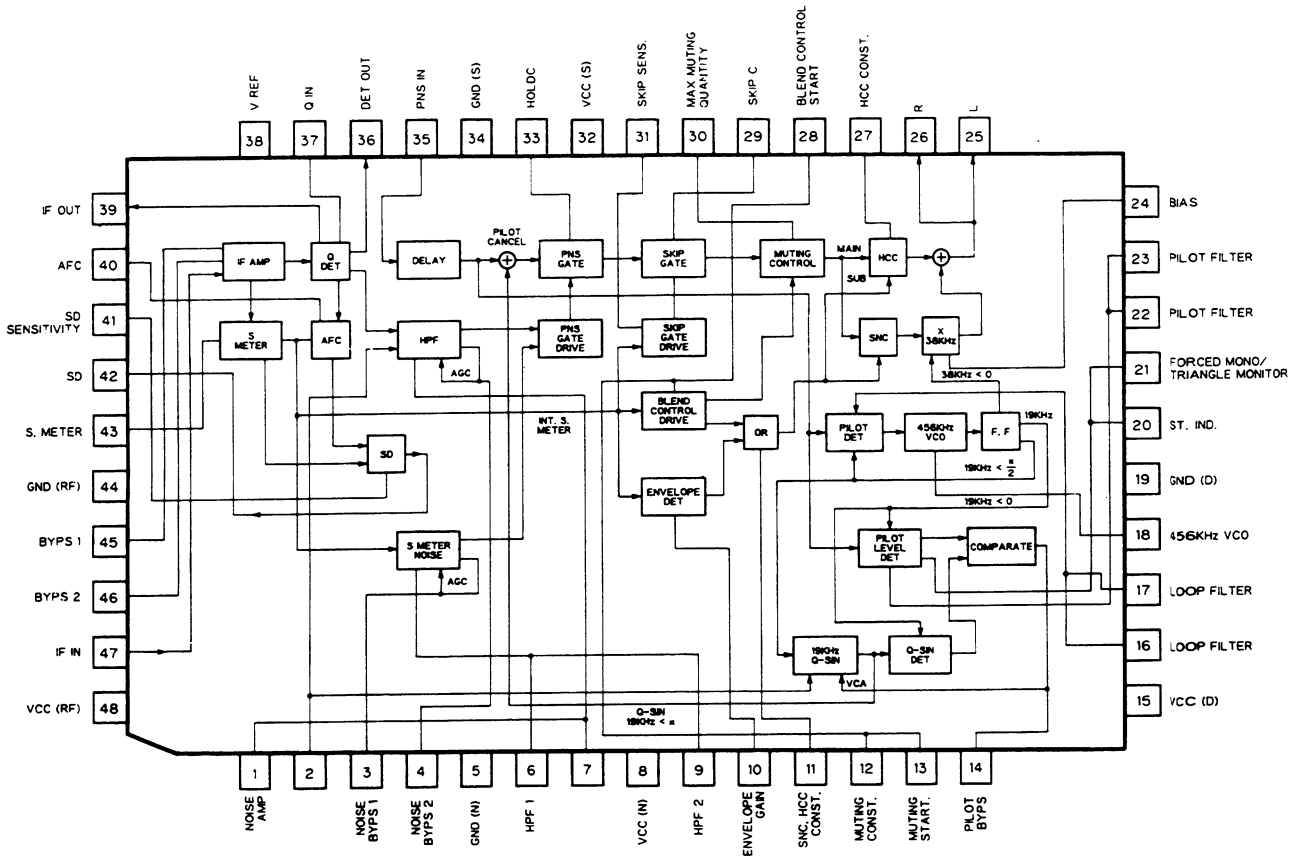
CLOCK ADJUSTMENT (UC, ES model)

No.	Adjusting Point	Adjustment Method
1	AM Tuner Mode	Display: UC model 1,710kHz Display: ES model 1,602kHz
2	TC501	Frequency Counter: UC model 12,420kHz ± 50Hz Frequency Counter: ES model 12,312kHz ± 50Hz

ES model when tuning step at 9kHz.

•ICs

PA4012B



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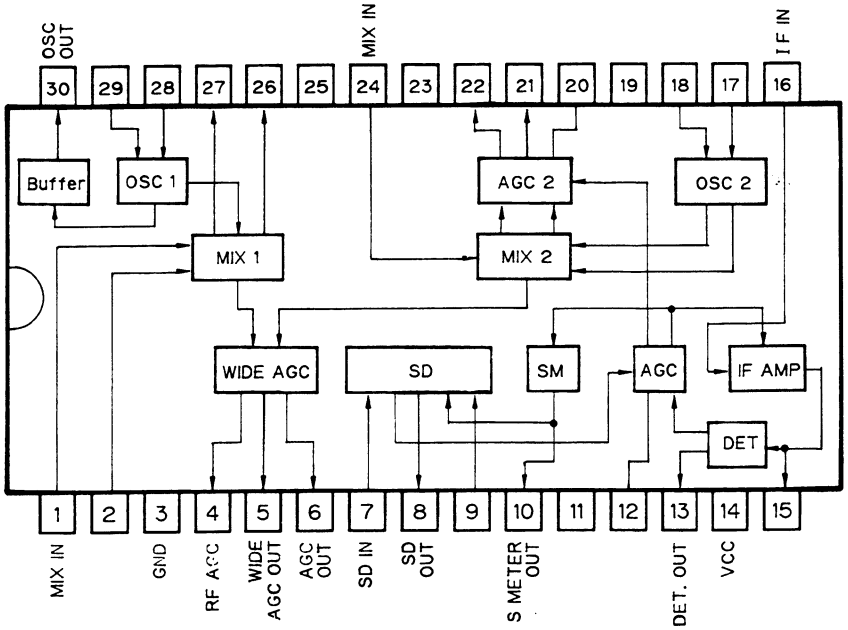
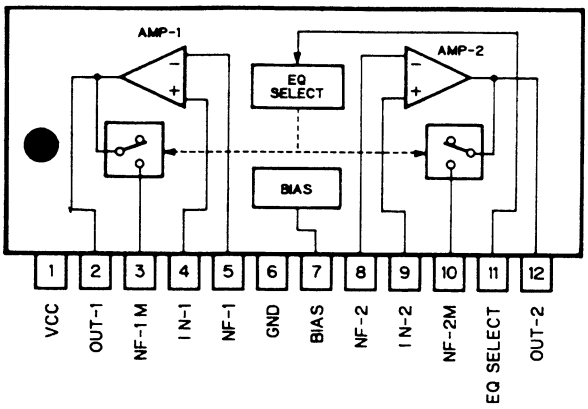
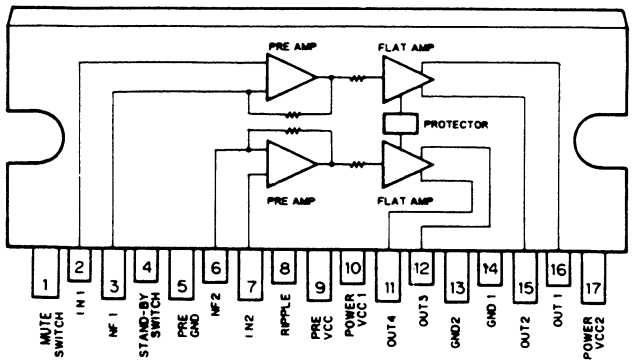


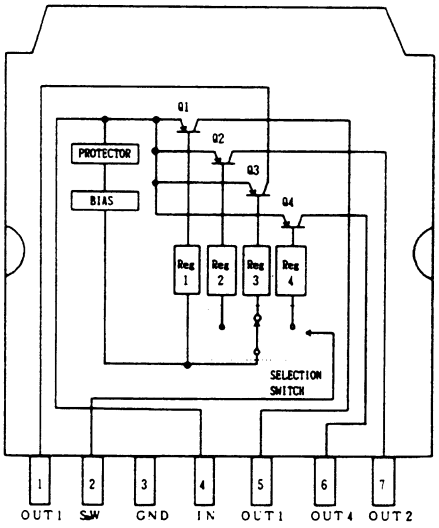
TA8162SN



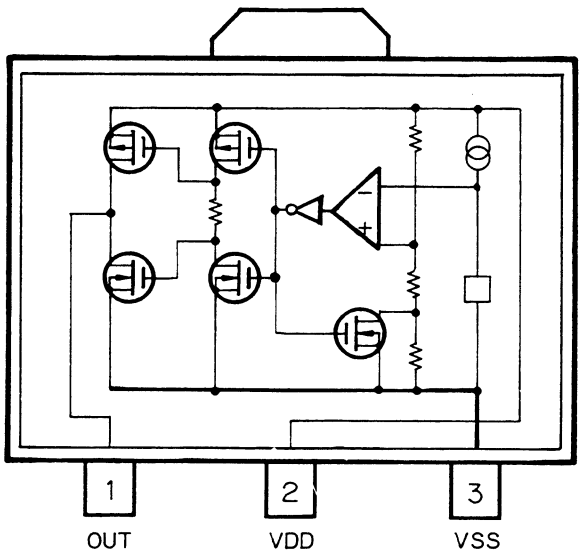
TA8215H-A



TA8214K

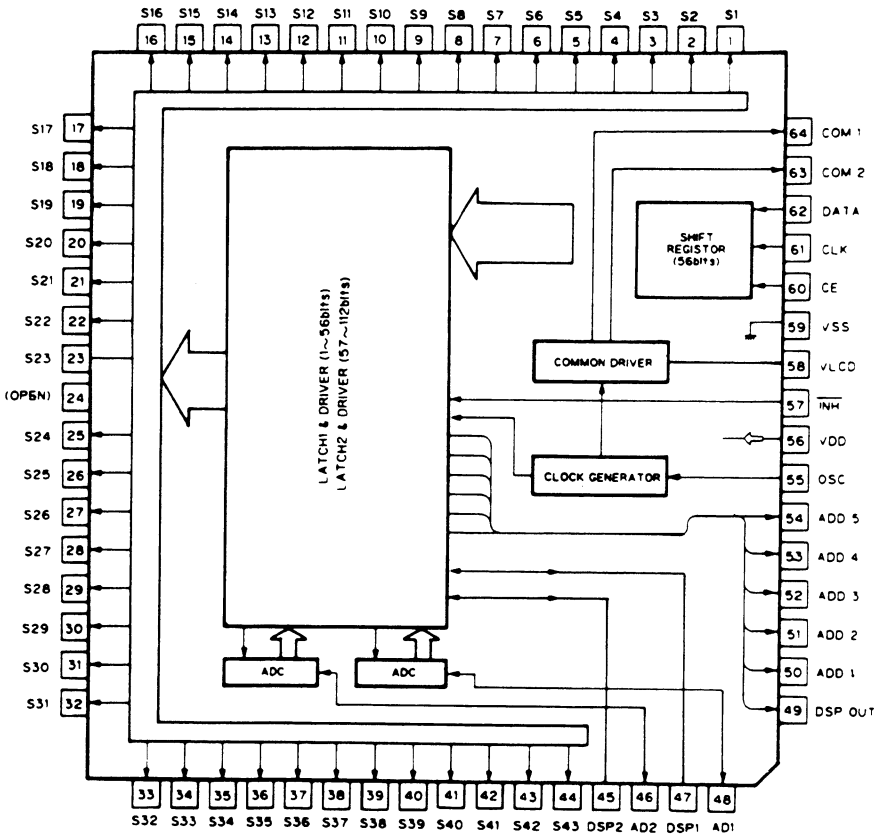


S-80740AH

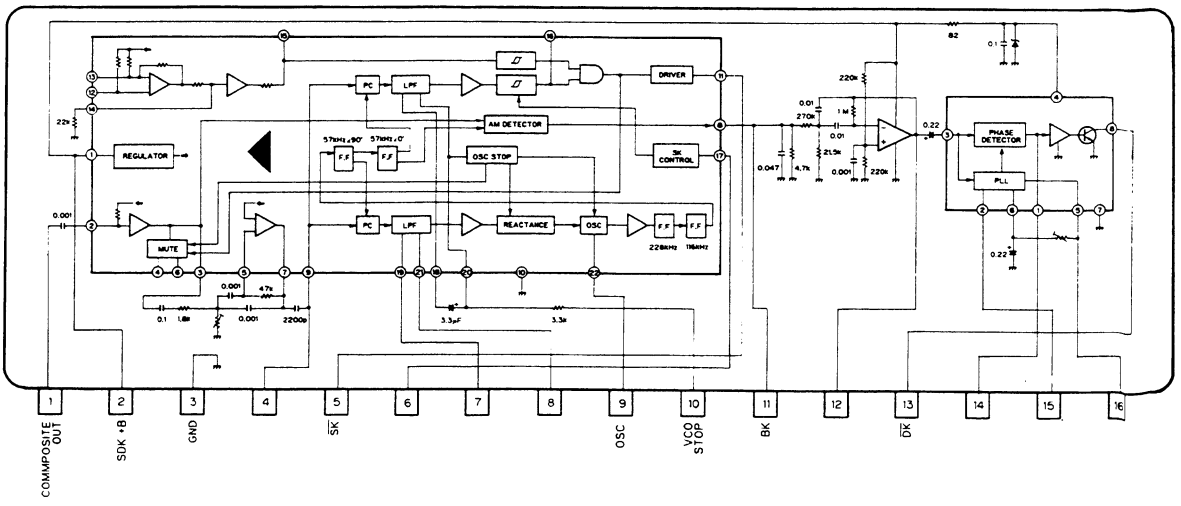


*IC's marked by * are MOS type.*
Be careful in handling them because they are very liable to be damaged by electrostatic induction.

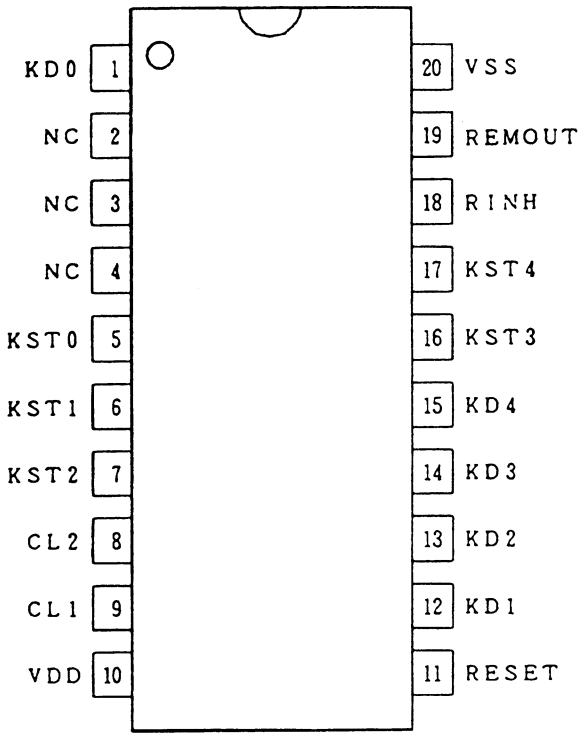
* LC7582A



KHAC02



PD4285

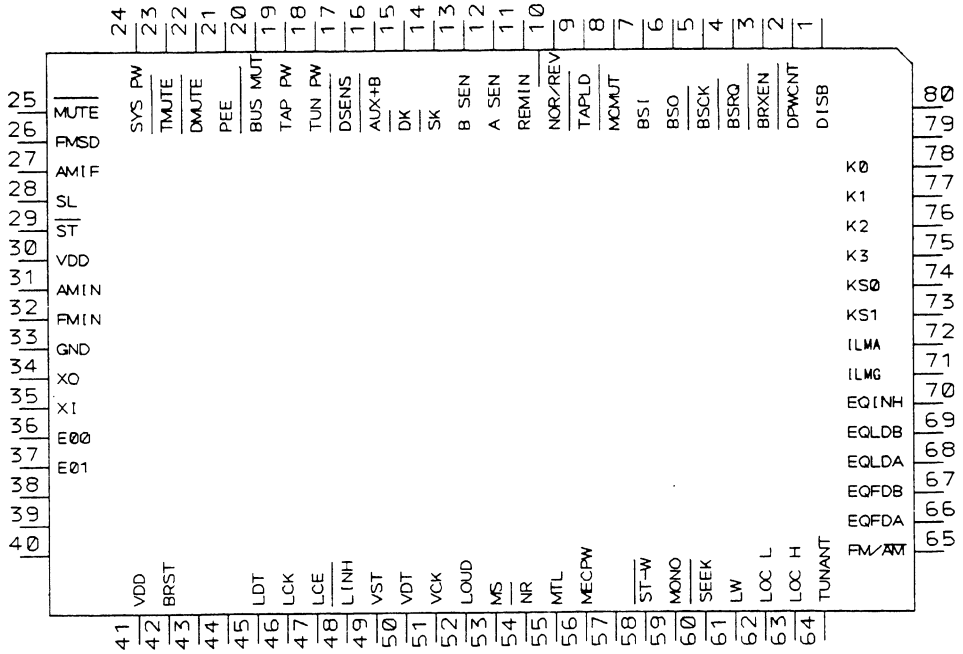


•Pin Functions (PD4285)

Pin No.	Pin Name	I/O	Output Format	Function and Operation
1	KDD	INPUT		Key return input
2—4	NC			
5—7	KST0—KST2	OUTPUT	NM	Key strobe output
8	CL2			System clock generator connector pin
9	CL1			System clock generator connector pin
10	VDD			
11	RESET	INPUT		Reset input
12—15	KD1—KD4	INPUT		Key return input
16, 17	KST3, KST4	OUTPUT	NM	Key strobe output
18	RINH	OUTPUT	NM	Remote controller OFF output when key data is outputed
19	REMOUT	OUTPUT	NM	Remote controller data output
20	VSS			GND

Output Format	Meaning
NM	Neutral resistivity N channel open drain

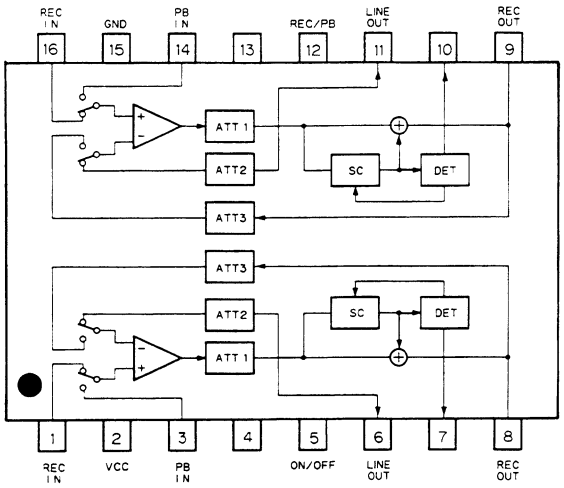
* PD4302
PD4343A



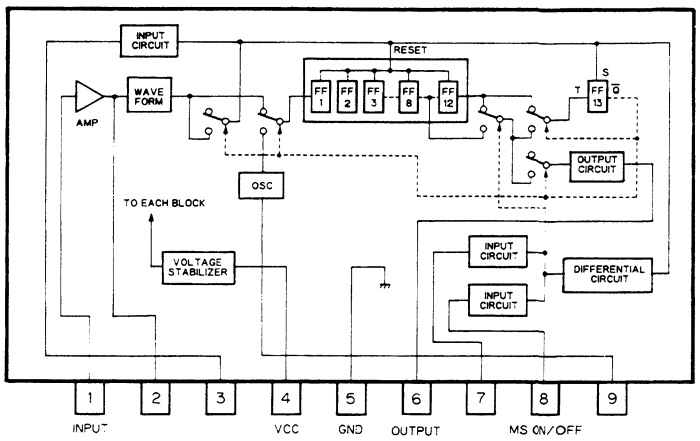
•Pin Functions (PD4302, PD4343A)

Pin No.	Pin Name	I/O	I/O Format	Function and Operation
1	DISB	Output	C	AUX control output
2	$\overline{\text{DPWCNT}}$	Output	C	Front panel EJECT/REPLACE control signal output
3	$\overline{\text{BRXEN}}$	Input/ Output		Bus reception enable line
4	$\overline{\text{BSRQ}}$	Input/ Output		Data communications serial poll request
5	$\overline{\text{BSCK}}$	Input/ Output		Bus serial clock input/output
6	BSO	Output		Bus serial data output
7	BSI	Input		Bus serial data input
8	$\overline{\text{MCMUT}}$	Input		Mechanism mute request
9	$\overline{\text{TAPLD}}$	Input		Cassette loading input
10	NOR/$\overline{\text{REV}}$	Input		Deck FWD/REV sensor input
11	REMIN			Key input
12	ASENS			ACC sense input
13	BSENS			Back up sense input
14	$\overline{\text{SK}}$	Input		SK signal input
15	$\overline{\text{DK}}$	Input		DK signal input
16	$\overline{\text{AUX+B}}$	Input		AUX input
17	$\overline{\text{DSENS}}$	Input		Front panel EJECT/REPLACE sensor input
18	TUNPW	Output	N	Tuner power supply control
19	TAPPW	Output	N	Deck power supply control
20	$\overline{\text{BUSMUT}}$	Output	N	Bus mute output
21	PEE	Output	C	Beep tone output
22	$\overline{\text{DMUTE}}$	Output	C	Deck mute output
23	$\overline{\text{TMUTE}}$	Output	C	Tuner mute output

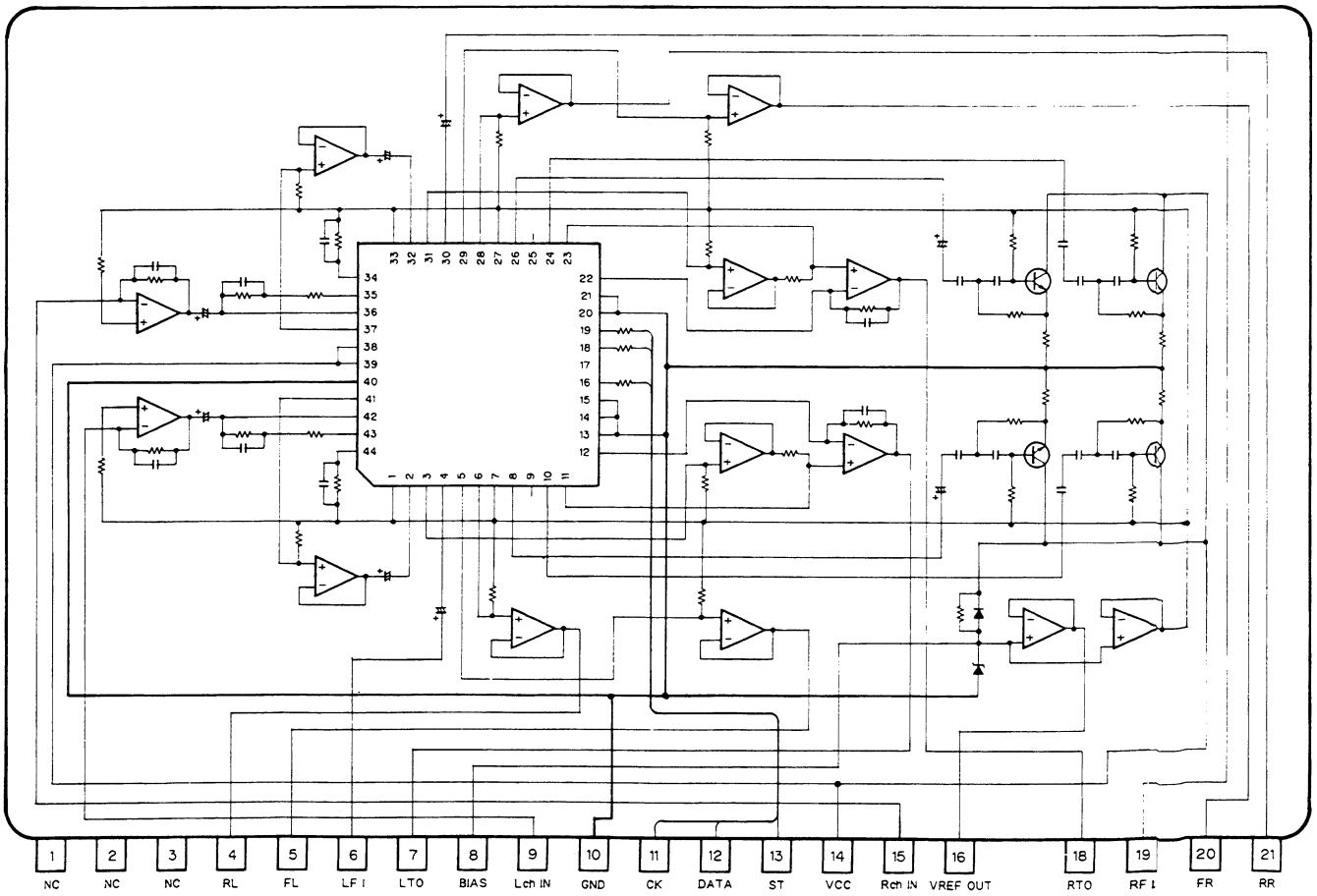
CXA1102P



AN6263N



KHA272

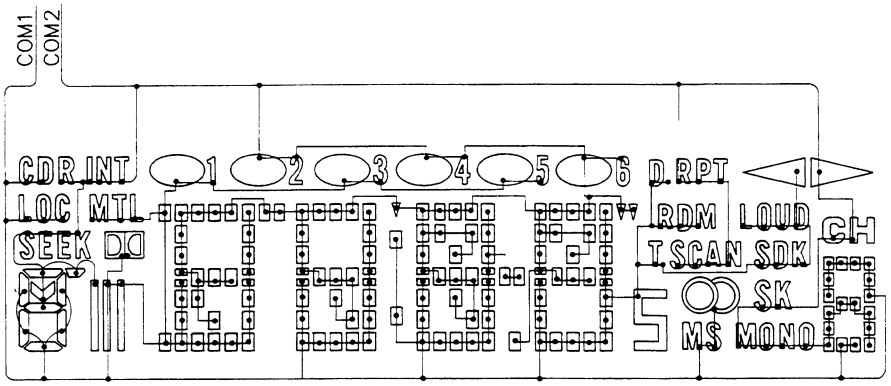


Pin No.	Pin Name	I/O	I/O Format	Function and Operation
24	SYSPW	Output	C	System power supply control
25	$\overline{\text{MUTE}}$	Output	C	Mute
26	FMSD	Input		FM IF input
27	AMIF	Input		AM IF input
28	SL	Input		Signal level input
29	$\overline{\text{ST}}$	Input		Stereo signal input
30	VDD			
31	AMIN	Input		AM VCO input
32	FMIN	Input		FM VCO input
33	GND			
34, 35	Xout, in			
36, 37	E00, 1			
38-40				Not used
41	VDD			
42	$\overline{\text{BRST}}$	Output	C	Bus reset
43, 44				Not used
45	LDT	Output	C	LCD driver data output
46	LCK	Output	C	LCD driver clock
47	LCE	Output	C	LCD driver CE
48	$\overline{\text{LINH}}$	Output	C	LCD driver INH
49	VST	Output	C	E-VOL strobe
50	VDT	Output	C	E-VOL data
51	VCK	Output	C	E-VOL clock
52	LOUD	Output	C	Loudness
53	MS	Output	C	Music signal input
54	$\overline{\text{NR}}$	Output	C	Dolby NR ON/OFF output
55	MTL	Output	C	Deck METAL (70 μ S) output
56	MECPW	Output	C	Deck power supply control
57				Not used
58	$\overline{\text{ST-W}}$	Output	C	Stereo wide
59	MONO	Output	C	Mono output
60	$\overline{\text{SEEK}}$	Output	C	"L" output when SEEK
61	LW	Output	C	LW output
62	LOCL	Output	C	Local L
63	LOCH	Output	C	Local H
64	TUNANT	Output	C	Antenna output
65	FM/$\overline{\text{AM}}$	Output	C	FM/AM switching
66	EQFDA	Output	C	1P. EQ Fc control
67	EQFDB	Output	C	1P. EQ Fc control
68	EQLDA	Output	C	1P. EQ level control
69	EQLDB	Output	C	1P. EQ level control
70	EQINH	Output	C	1P. EQ INH
71	ILLMG	Output	C	Green illumination light output
72	ILLMA	Output	C	Amber illumination light output
73	KS1	Output	C	Model sense output
74	KS0	Output	C	Model sense output
75-78	K3-K0	Input		Key matrix input
79, 80				Not used

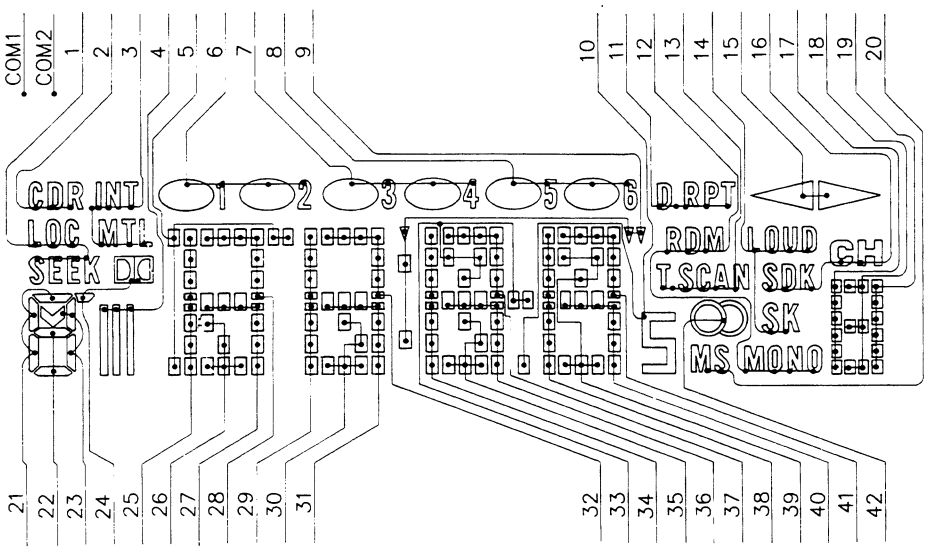
Output Format	Meaning
C	CMOS Output
N	N channel open drain

•LCD (CAW1124)

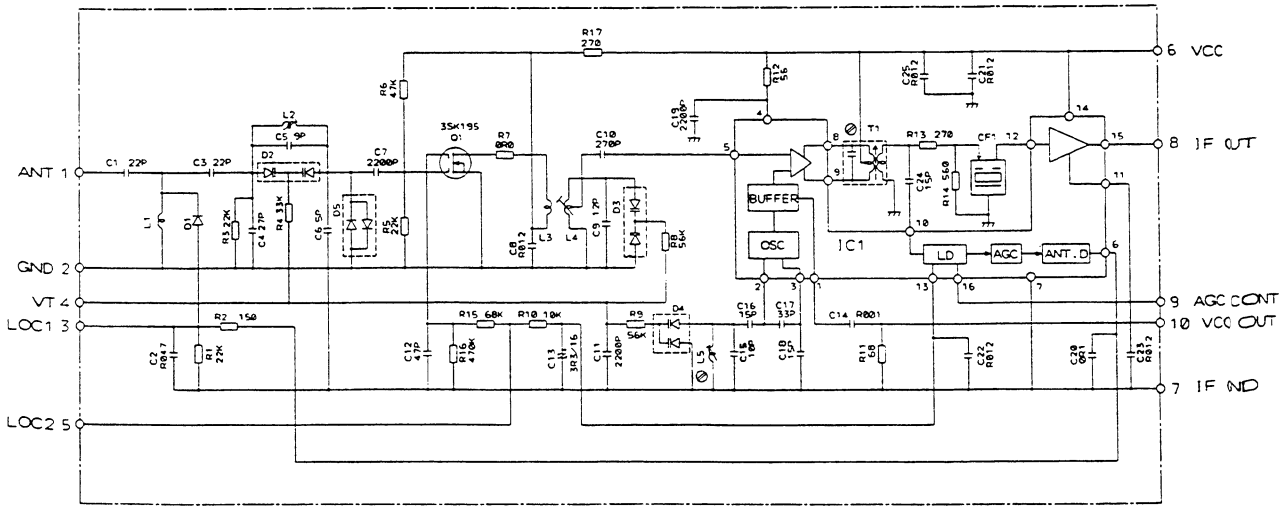
COMMON



SEGMENT



•FM FRONT END (CWB1035)



NOTE :

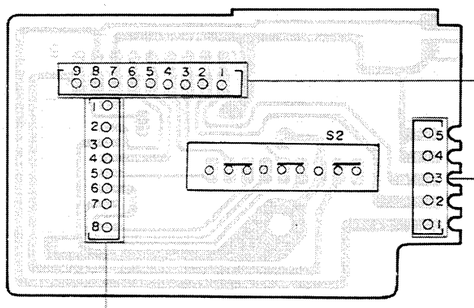
Symbol indicates a resistor.
No differentiation is made between chip resistors and discrete resistors.

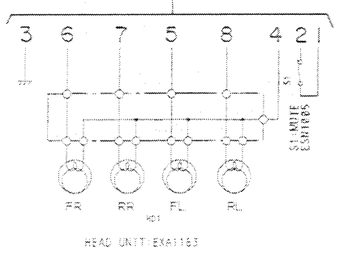
Symbol indicates a capacitor.
No differentiation is made between chip capacitors and discrete capacitors.

Decimal points for resistor and capacitor fixed values are expressed as
2.2→2R2
0.022→R022

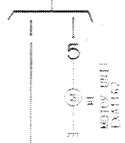
9. CONNECTION DIAGRAM (KEH-M6300/EW, IT, M6300SDK/WG)

P.C. BOARD(A)

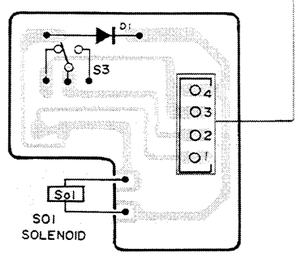




TO FM/AM TUNER UNIT



P.C. BOARD(B)



TUNER AMP P.C. BOARD

| IC,Q | | |

7 | 8 | 9 | 10 | 11 | 12

Q974 Q975 Q969 Q963 Q551 IC501
61 Q965 Q964 Q550 Q552 Q553 Q554
Q977 Q979 Q918 Q980 Q978

PRE OUT(1) P.C. BOARD

IC,Q Q800 Q808 Q806 Q802 Q807 Q801 Q805

SDK P.C. BOARD

IC, Q IC701 Q703 Q702 Q701

RCA FRONT

TO FM/AM TUNER UNIT

A

B

KEY BOARD UNIT

IC, Q IC903 IC902 IC901

ADJ

C

D

Fig. 6

7 | 8 | 9 | 10 | 11 | 12

10. SCHEMATIC CIRCUIT DIAGRAM (KEH-M6300/EW, IT, M6300SDK/WG)

TO TUNER AMP P.C.BOARD

SDK P.C.BOARD (KEH-M6300SDK)

TUNER AMP P.C.BOARD

FM/AM TUNER UNIT

EW (Fig.11), SDK (Fig.13)

IC701 KHA142

P.C.BOARD (A)

S2: FWD/REV ESH1003

S1: MUTE ESN1005

HEAD UNIT: EXA1163

TEST TAPE 315Hz 0dB

P.C.BOARD (B)

SOLENOID EXP100B

ELECTRONIC VOL

IC451 KHA272

REGULATOR

IC951 TA8214K

SYSTEM CONTROL

IC502

PD4302

VCO AMP

LOOP FILTER

ACC

KEY BOARD UNIT

S901-919: CSG-253

S-80740AH

IC901

PD4285

IL901-911, 913: CEL1208 (M6300/EW, SDK/WG)

IL902, 904-907, 912: CEL1207 (M6300/IT)

LCD DRIVER

IC903

LC7582A

LCD CWA1124

SWITCHES:
P.C.BOARD(A)
S2:FWD/REV SWITCH·····FWD-REV
P.C.BOARD(B)
S3:TAPE/TUN SWITCH·····TAPE-TUNER
MISCELLANEOUS
S1 MUTE SWITCH·····ON-OFF
The underlined indicates switch position.

NOTE:
Symbol indicates a resistor.
No differentiation is made between chip resist
discrete resistors.
Symbol indicates a capacitor.
No differentiation is made between chip capaci
discrete capacitors.

PRE OUT(1) P.C.BOARD

P.C.BOARD(B)

TAPE 315Hz 0dB

HEAD UNIT:EXA1163

ELECTRONIC VOL. +MIX AMP.

POWER AMP.

EQ. AMP.

DOLBY NR.

DRIVER

SDK model only

TO P.C.BOARD(A)

SWITCHES
P.C.BOARD(A)
S2 FWD/REV SWITCH ..... FWD-REV
P.C.BOARD(B)
S3 TAPE/TUN SWITCH ..... TAPE-TUNER
MISCELLANEOUS
S1 MUTE SWITCH ..... ON-OFF
The underlined indicates switch position.

NOTE:
Symbol indicates a resistor.
No differentiation is made between chip resistors and discrete resistors.
Symbol indicates a capacitor.
No differentiation is made between chip capacitors and discrete capacitors.
Decimal points for resistor and capacitor fixed values are expressed as:
2.2→2R2
0.022→R022

PRE OUT(1) P.C.BOARD

TUNER AMP UNIT
Consists of
TUNER AMP P.C.BOARD
PRE OUT(1) P.C.BOARD
SDK P.C.BOARD(M6300SDK)

RCA REAR

VOL. +MIX AMP.

POWER AMP.

EQ. AMP.

DOLBY NR.

ACC SENSE

BACK-UP SENSE

S2 CSG1012

VR351, 352: VRTB6VS333

SDK model only

TO P.C.BOARD(A)

M6300/EW, SDK/WG

M6300/IT

Fig. 7

11. SCHEMATIC CIRCUIT DIAGRAM (KEH-M6200/UC, M6250/ES)

TUNER AMP P.C.BOARD

FM/AM TUNER UNIT

UC (Fig.15), ES (Fig.17)

TO TUNER AMP P.C.BOARD

P.C.BOARD (A)

S2: FWD/REV ESH1003

S1: MUTE ESN1005

S3: TAPE/TUN ESH1004

MOTOR UNIT EXA1162

HEAD UNIT: EXA1163

SOLENOID EXP1008

TEST TAPE 315Hz 0dB

P.C.BOARD (B)

TUNER AMP UNIT
Consists of
TUNER AMP P.C.BOARD
PRE OUT(1) P.C.BOARD

SWITCHES
P.C.BOARD (A)
S2: FWD/REV S
P.C.BOARD (B)
S3: TAPE/TUN
MISCELLANEOUS
S1: MUTE SWITC
The underline

NOTE:
- Symbol indicates a resistor. No differentiation is made between chi discrete resistors.
- Symbol indicates a capacitor. No differentiation is made between chi discrete capacitors.

Decimal points for resistor and capacitor fixed values are expressed as:
2.2→2R2
0.022→R022

SYSTEM CONTROL
IC502
PD4343A

REGULATOR
IC951 TA8214K

ELECTRONIC VOL.
IC451 KHA272

VCO AMP

LOOP FILTER

KEY BOARD UNIT
S-80740AH
IC901
IC902 PD4285

LCD DRIVER
IC903
LC7582A

LCD CAW1124

IL908-911, 913 CEL1025

P.C.BOARD (A)

TUNER AMP UNIT
Consists of
TUNER AMP P.C.BOARD
PRE OUT(1) P.C.BOARD

SWITCHES

P.C.BOARD(A)

S2 FWD/REV SWITCH ..... FWD-REV

P.C.BOARD(B)

S3 TAPE/TUN SWITCH ..... TAPE-TUNER

MISCELLANEOUS

S1 MUTE SWITCH ..... ON-OFF

The underlined indicates switch position.

NOTE:

Symbol indicates a resistor. No differentiation is made between chip resistors and discrete resistors.

Symbol indicates a capacitor. No differentiation is made between chip capacitors and discrete capacitors.

Decimal points for resistor and capacitor fixed values are expressed as:
2.2→2R2
0.022→R022

MOTOR UNIT EXA1162 M1

S3 TAPE/TUN ESH1004

PRE OUT(1) P.C.BOARD

ELECTRONIC VOL. +MIX AMP.

IC451 KHA272

POWER AMP.

IC501 TAB2154-A

EQ. AMP.

IC350 TA8162SN

LCD DRIVER

IC903

LC7582A

ACC SENSE

BACK-UP SENSE

-9.5dBs

-20.7dBs

-73.8dBs

TO P.C.BOARD(A)

	KEH-M6200/UC	KEH-M6250/ES
R998	2R2K	——
D508	1SS133	——
D509	——	1SS133

(A)
V SWITCH·····FWD-REV
(B)
UN SWITCH·····TAPE-TUNER
EOUS
WITCH·····ON-OFF
lined indicates switch position.

chip resistors and

chip capacitors and

PRE OUT(1) P.C.BOARD

RCA REAR

ANT

L. +MIX AMP.

-9.5dBs

-20.7dBs

-73.8dBs

POWER AMP.

IC501 TA8215H-A

EQ. AMP.

IC350 TA8162SN

ACC SENSE

BACK-UP SENSE

CD-M

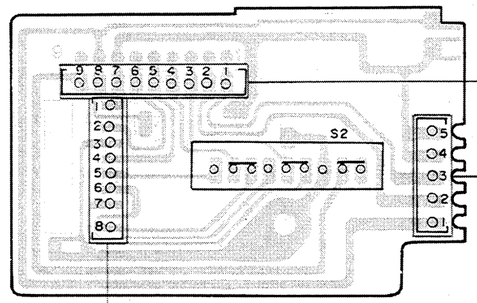
TO P.C.BOARD(A)

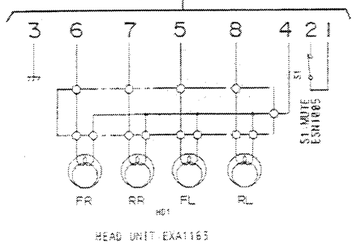
	KEH-M6200/UC	KEH-M6250/ES
R998	2R2K	———
D508	1SS133	———
D509	———	1SS133

Fig. 8

12. CONNECTION DIAGRAM (KEH-M6200/UC, M6250/ES)

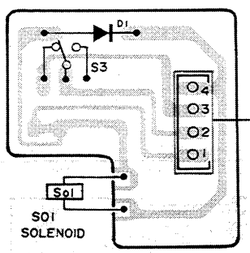
P.C. BOARD(A)





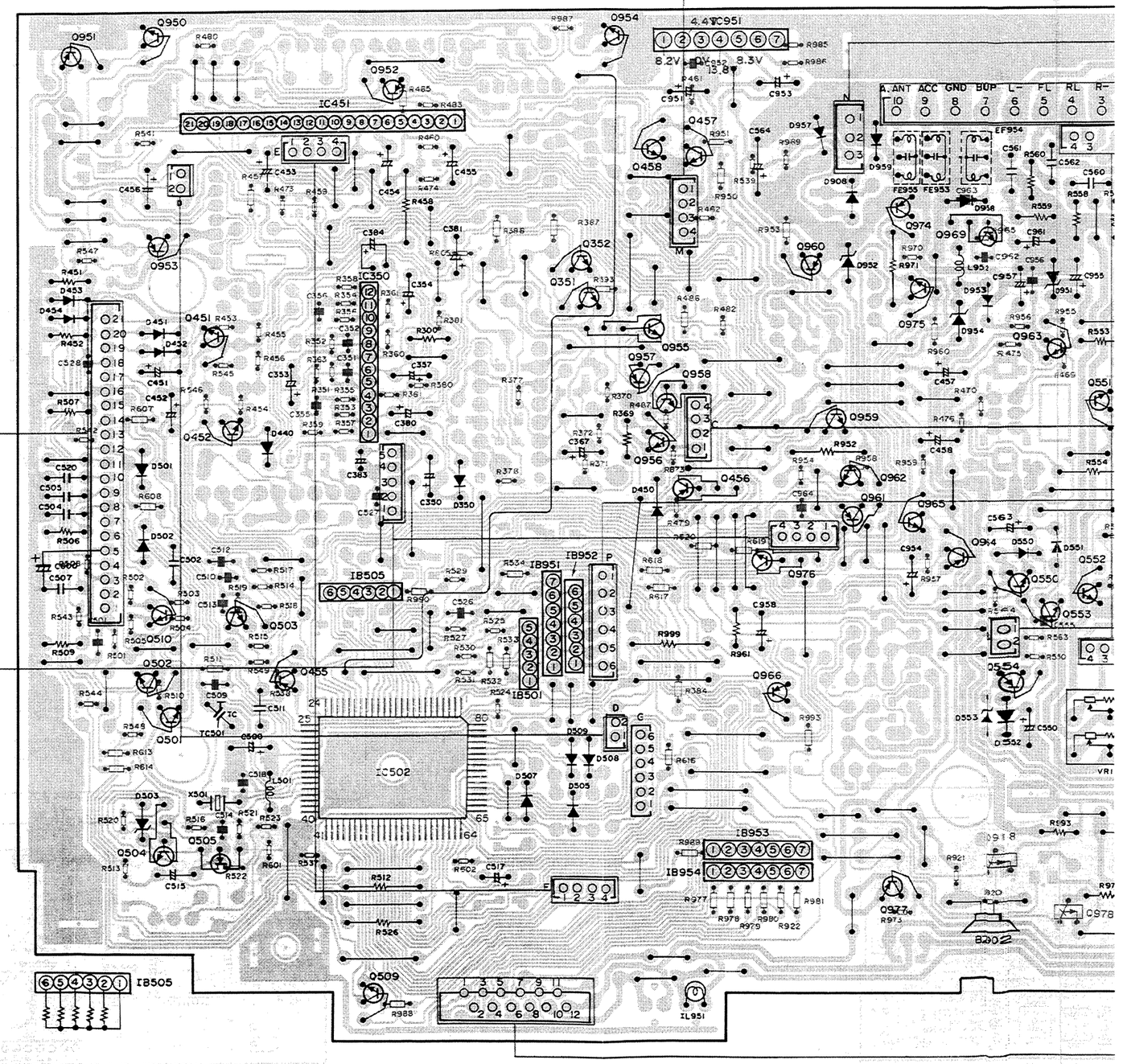
TO FM/AM TUNER UNIT

P.C. BOARD(B)



TUNER AMP P.C. BOARD

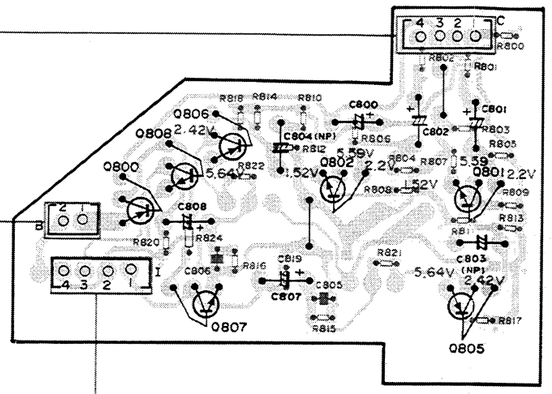
IC,Q ADJ: Q951 Q950 Q953 Q452 IC352 Q510 Q502 Q501 Q504 Q505 TC501 Q350 IC350 Q503 Q455 IC502 Q509 Q952 IC451 Q958 Q957 Q956 Q955 IC951 Q954 Q352 Q351 Q458 Q457 Q456 Q976 Q966 Q960 Q959 Q962 Q961 Q965 Q964 Q550 Q974 Q975 Q969 Q977

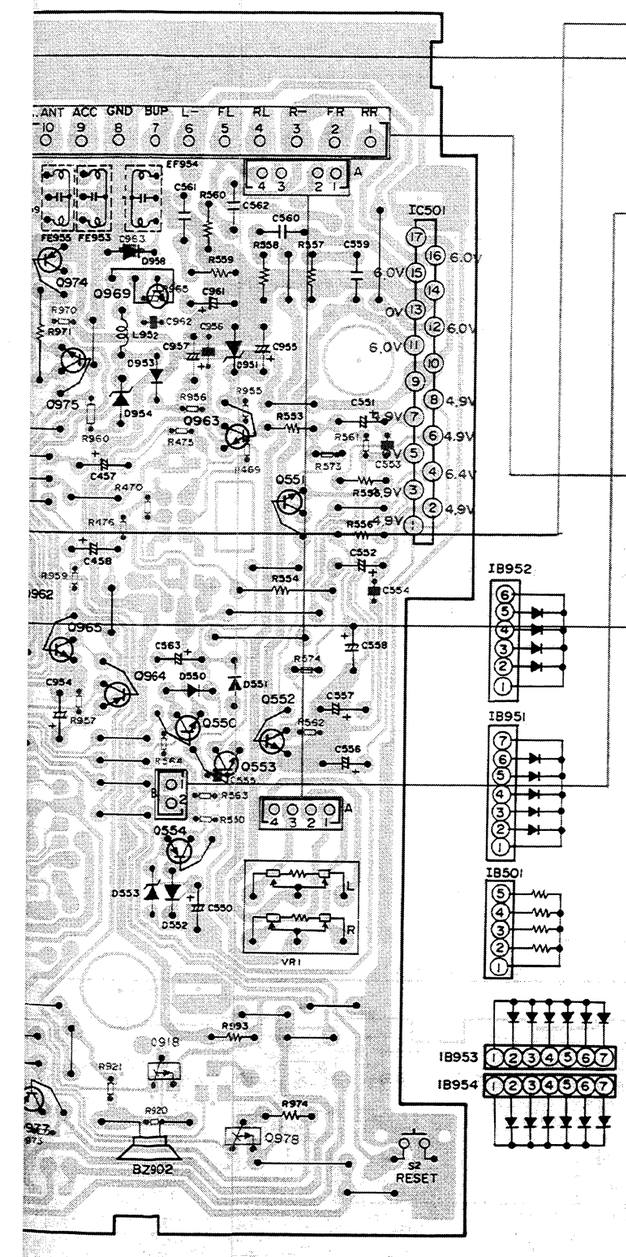


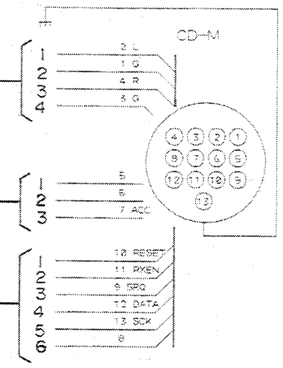
PRE OUT(1) P.C. BOARD

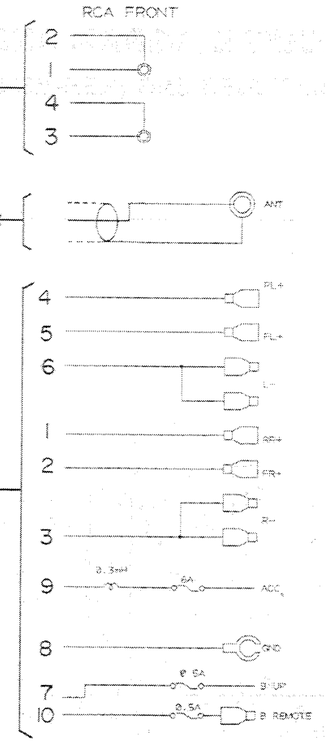
IC,Q						
	Q974	Q975	Q969	Q963	Q551	IC501
62 Q961	Q965	Q964	Q550	Q552	Q553	Q554
		Q977		Q918		Q978

IC,Q				
	Q800 Q808	Q806	Q802	Q801
	Q807			Q805









KEY BOARD UNIT

IC, Q			
	IC903	IC902	IC901
ADJ			

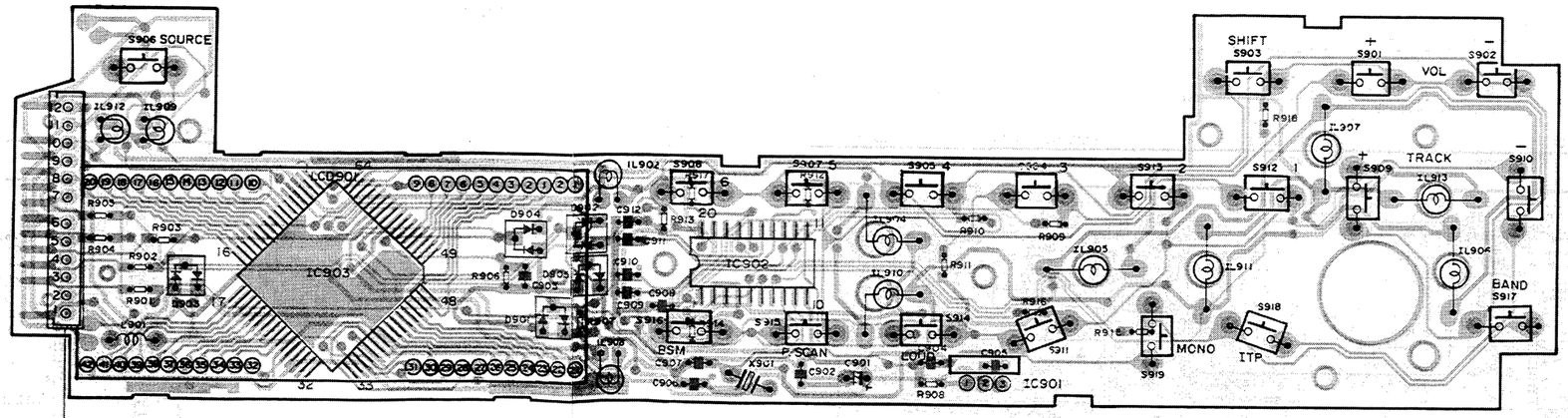


Fig. 9

13. CIRCUIT DIAGRAM AND P. C. BOARD PATTERN

13.1 FM/AM TUNER UNIT (KEH-M6300/EW, IT)

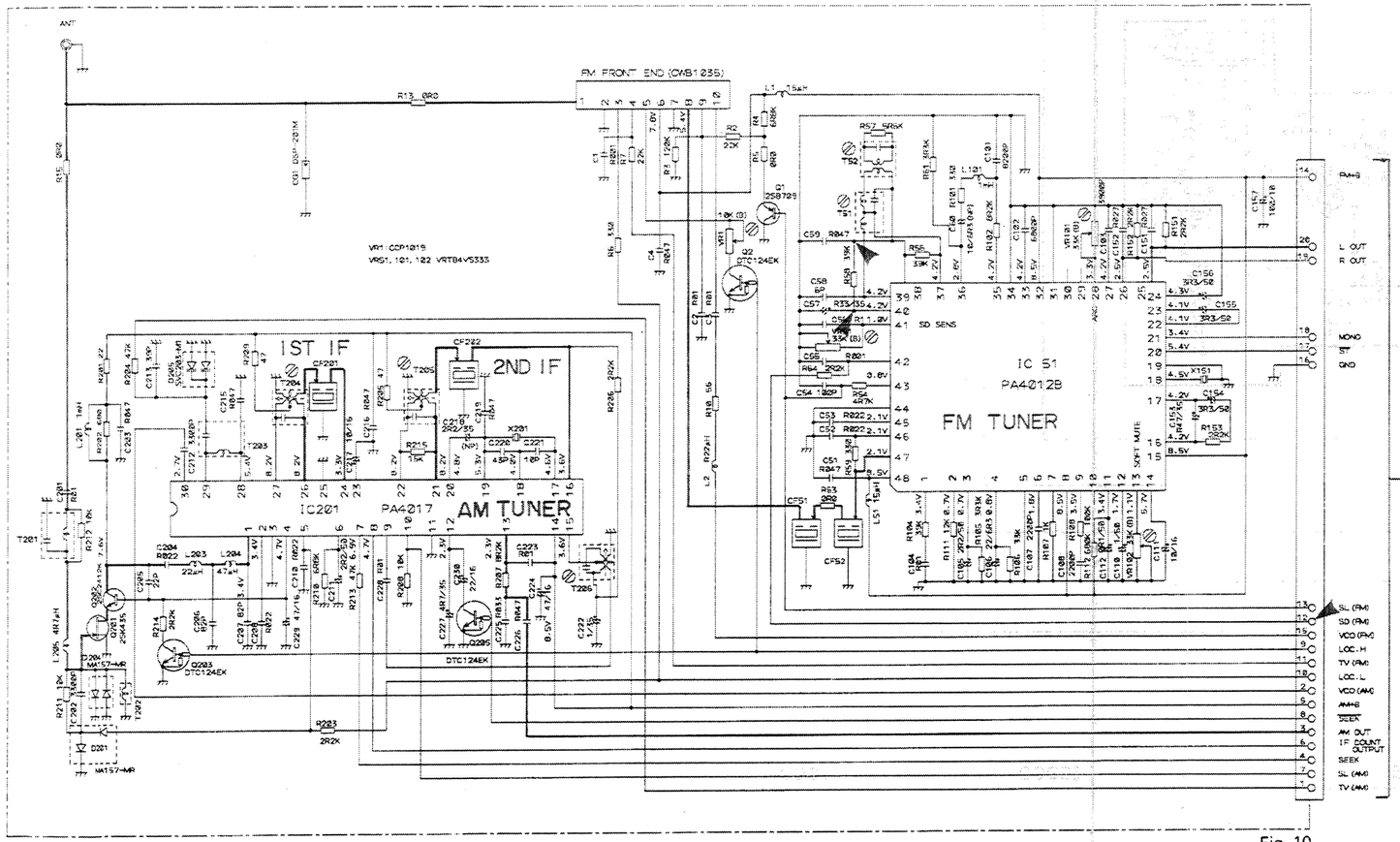


Fig. 10

NOTE:

- Symbol indicates a resistor. No differentiation is made between chip resistors and discrete resistors.
- Symbol indicates a capacitor. No differentiation is made between chip capacitors and discrete capacitors.

Decimal points for resistor and capacitor fixed values are expressed as:
2.2→2R2
0.022→R022

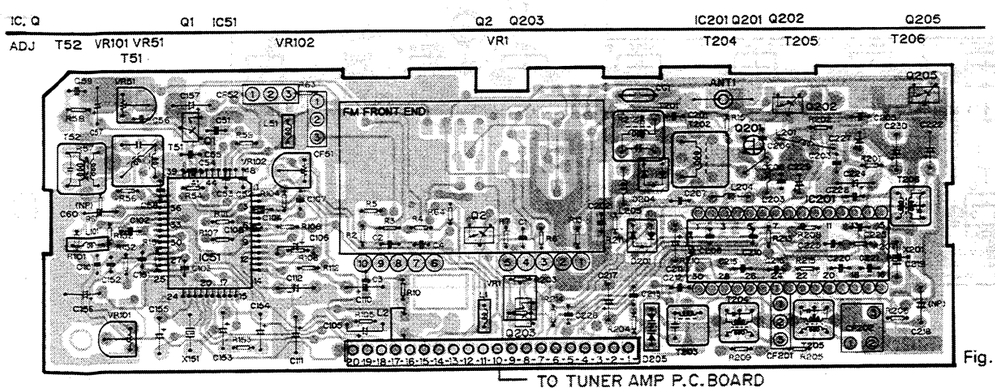
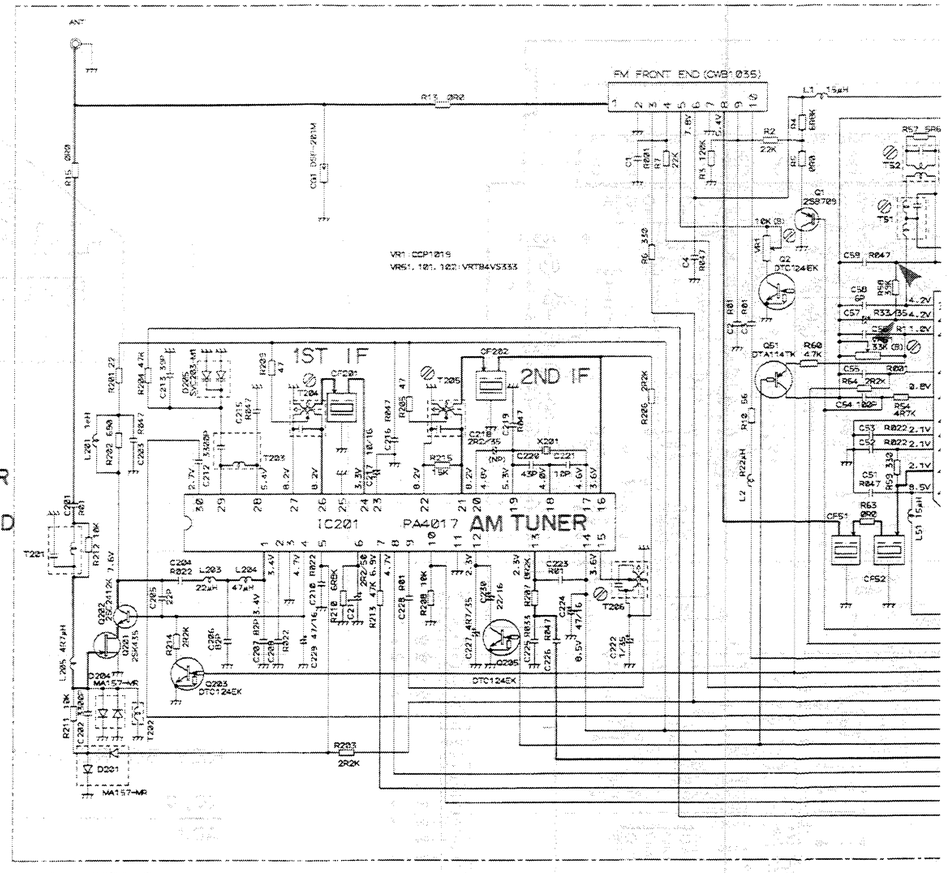


Fig. 11

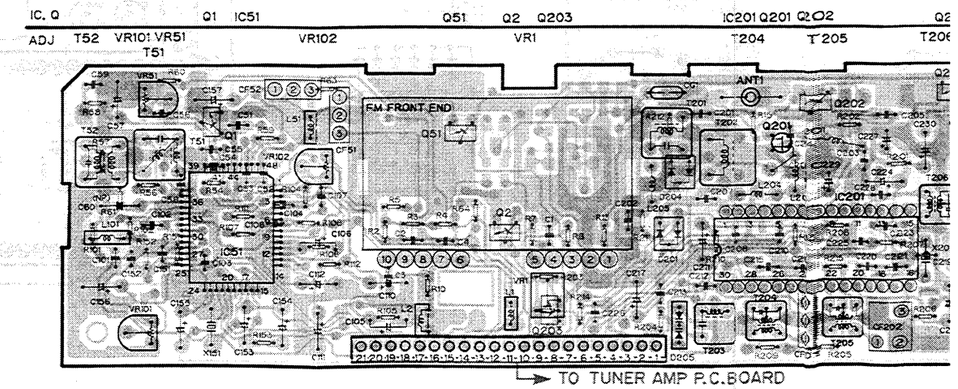
13.2 FM/AM TUNER UNIT (KEH-M6300SDK/WG)



NOTE:

- Symbol indicates a resistor. No differentiation is made between chip resistors and discrete resistors.
- Symbol indicates a capacitor. No differentiation is made between chip capacitors and discrete capacitors.

Decimal points for and capacitor fixed are expressed as:
2.2→2R2
0.022→R022



13.3 FM/AM TUNER UNIT (KEH-M6200/UC)

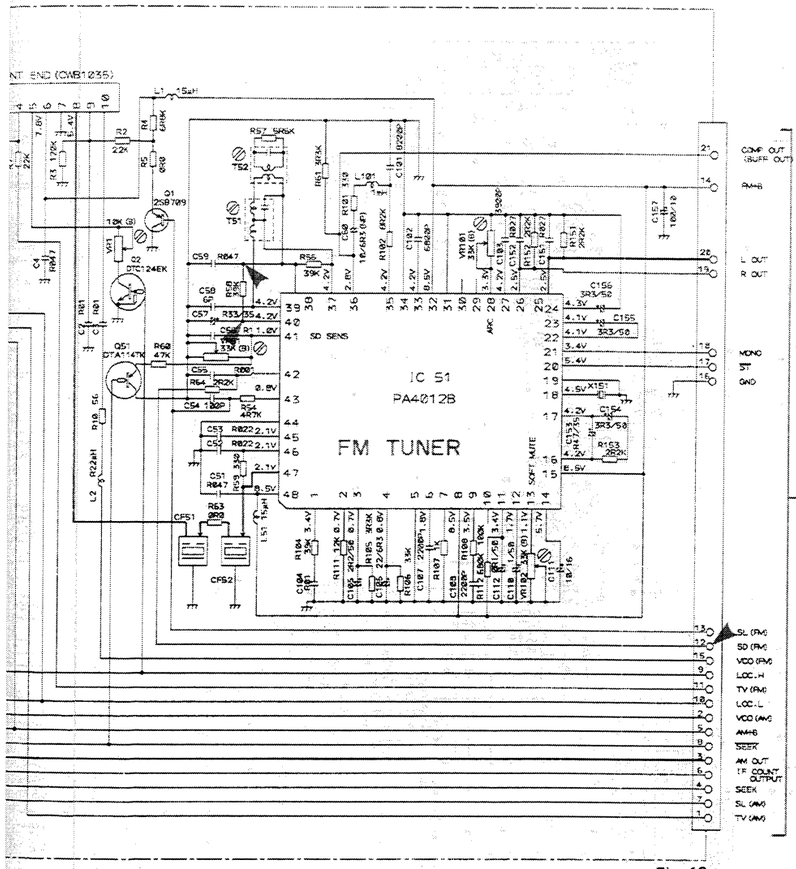


Fig. 12

Decimal points for resistor and capacitor fixed values are expressed as:
2.2→2R2
0.022→R022

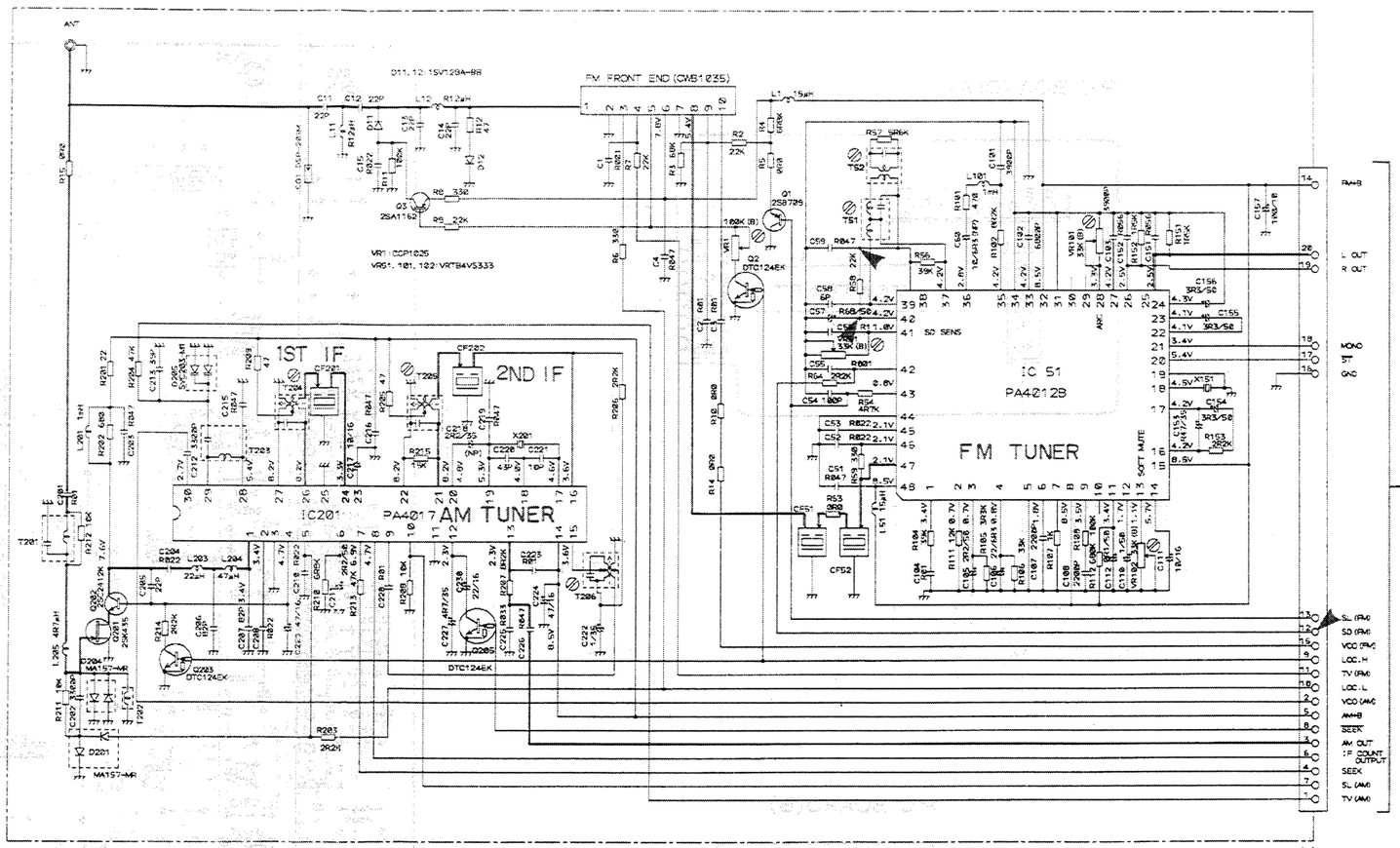


Fig. 14

NOTE

Symbol indicates a resistor.
No differentiation is made between chip resistors and discrete resistors.

Symbol indicates a capacitor.
No differentiation is made between chip capacitors and discrete capacitors.

Decimal points for resistor and capacitor fixed values are expressed as:
2.2→2R2
0.022→R022

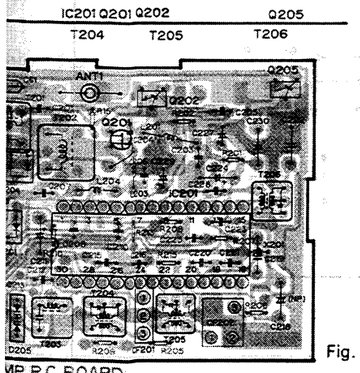


Fig. 13

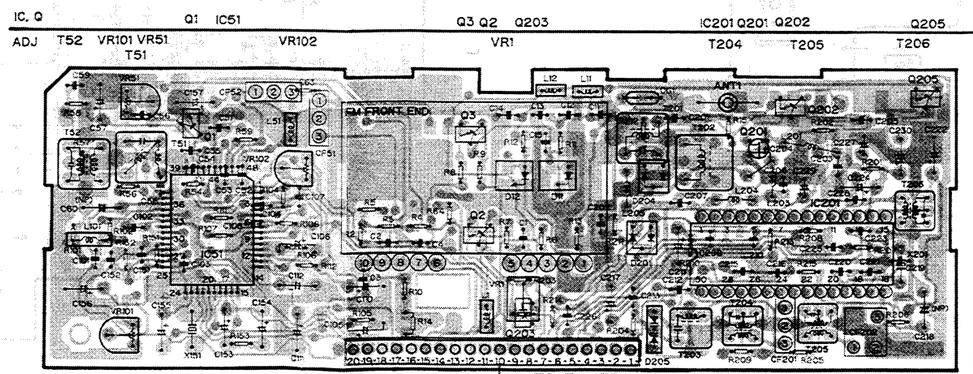


Fig. 15

13.4 FM/AM TUNER UNIT (KEH-M6250/ES)

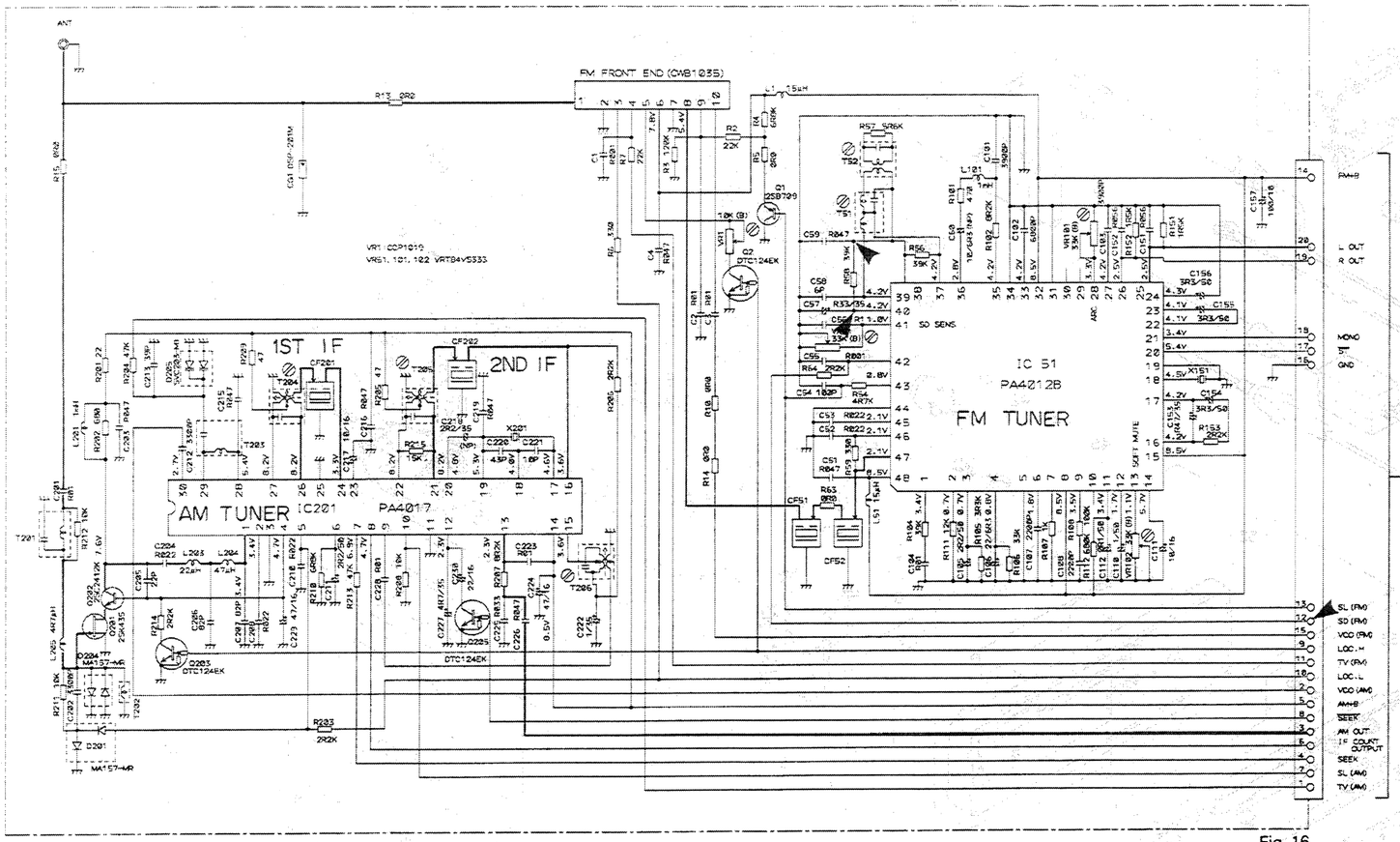


Fig. 16

NOTE:

Symbol indicates a resistor.
No differentiation is made between chip resistors and discrete resistors.

Symbol indicates a capacitor.
No differentiation is made between chip capacitors and discrete capacitors.

Decimal points for resistor and capacitor fixed values are expressed as:
2.2→2R2
0.022→R022

IC, Q Q1 IC51 Q2 Q203 IC201 Q201 Q202 Q205

ADJ T52 VR101 VR51 T51 VR102 VR1 T204 T205 T206

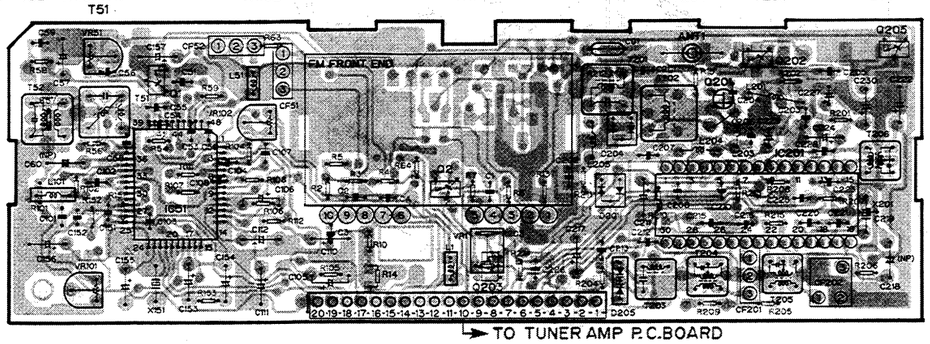


Fig. 17

14. CHASSIS EXPLODED VIEW

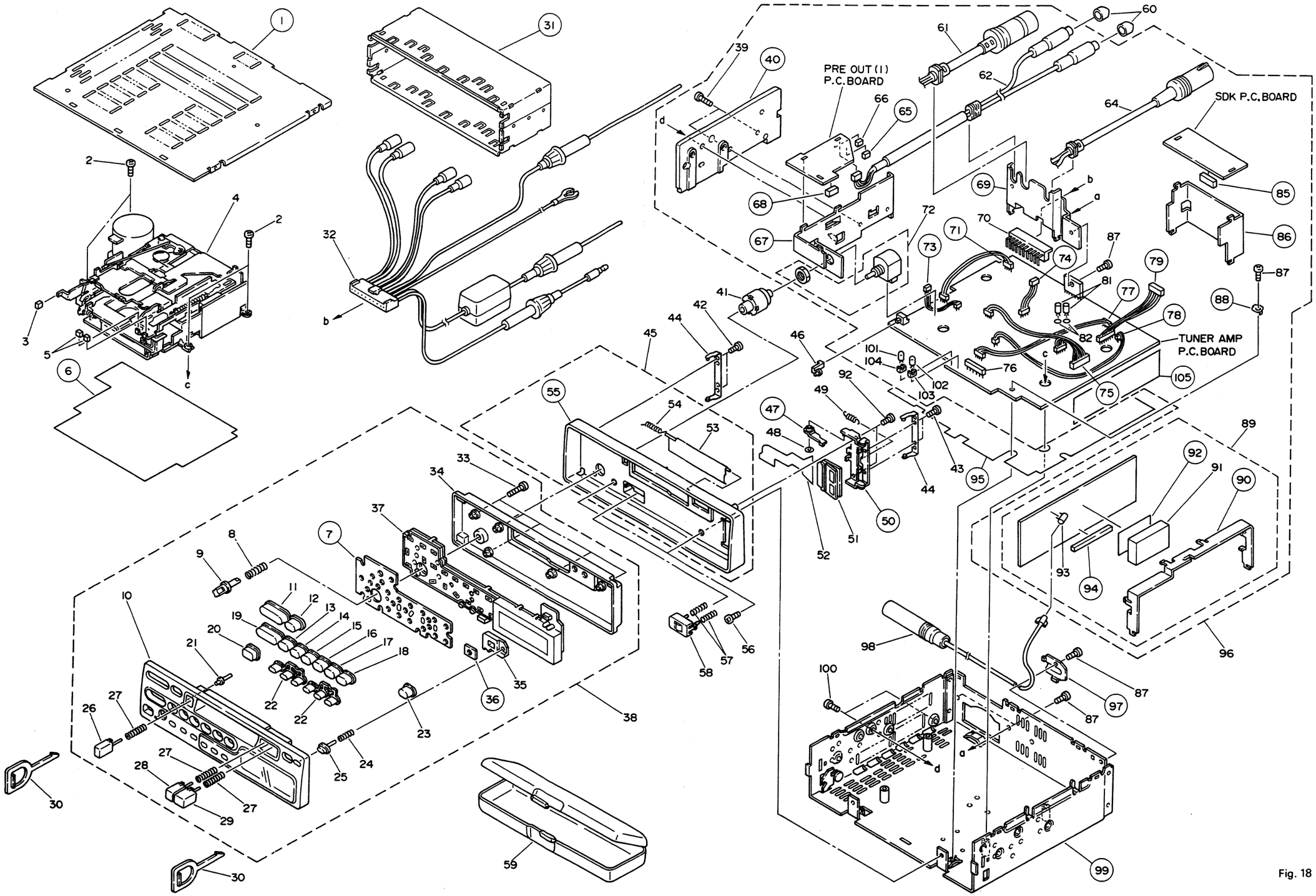


Fig. 18

•Parts List (KEH-M6300/EW)

NOTE:

- *The parts marked with "◉" may need long time to supply and their supply is subject to refuse as the case may be.*
- *Because the parts with encircled number shown on the dismantling drawing are not spare parts, we are unable to supply them in principle.*

Mark	No.	Description	Part No.	Mark	No.	Description	Part No.
	1	Case	CNB1431		45	Panel Unit	CXA4155
	2	Screw	BMZ26P050FMC		46	Button	CAC2988
	3	Button	CAC2819		47	Arm Unit	CXA4000
◉	4	Cassette Mechanism Assy	EXK1735		48	Washer	CBF1037
					49	Spring	CBH1395
	5	Button	CAC2820		50	Holder Unit	CXA3999
	6	Cover	CNM3157		51	Socket	CKS1664
	7	Cushion	CNM3155		52	P.C. Board	CNP2597
	8	Spring	CBH1391		53	Door	CAT1360
	9	Knob(Fader)	CAA1272		54	Spring	CBH1350
	10	Grille Unit	CXA4147		55	Panel	CNS2260
	11	Button(Vol)	CAC2821		56	Screw	CBA1154
	12	Button(Shift)	CAC2822		57	Spring	CBH1393
	13	Button(1)	CAC2811		58	Button Unit	CXA3850
	14	Button(2)	CAC2812		59	Case	CNS2269
	15	Button(3)	CAC2813		60	Cap	CNW-829
	16	Button(4)	CAC2937		61	DIN Connector Cord	CDE3419
	17	Button(5)	CAC2815		62	Connector	CDE3378
	18	Button(6)	CAC2816		63	·····	
	19	Button(Tune)	CAC2828		64	·····	
	20	Button(-)	CAC2817		65	Plug	CKS-783
	21	Button(Clear)	CAC2829		66	Plug	CKS1224
	22	Button Unit	CXA4132		67	Holder	CNC3579
	23	Button(SD)	CAC2826		68	Plug	CKS-785
	24	Spring	CBH1390		69	Holder	CNC3581
	25	Button	CAC2827		70	Plug	CKS-467
	26	Button(Eject)	CAC2823		71	·····	
	27	Spring	CBH1388		72	·····	
	28	Button(REW)	CAC2824		73	Connector	CDE3208
	29	Button(FF)	CAC2825		74	Connector	CDE3173
	30	Handle	CNC3664		75	Connector	CDE3174
	31	Holder	CNC3342		76	Connector	CKS1260
	32	Cord	CDE3180		77	Connector	CDE3210
	33	Screw	BPZ20P120FZK		78	Connector	CDE3222
	34	Grille Cover	CNS2259		79	·····	
	35	Lens	CNV2774		80	·····	
	36	Cushion	CNM3156		81	Capacitor	CCH1016
◉	37	Key Board Unit	CWM2697		82	Spacer	CNW-662
	38	Grille Assy	CXA4177		83	·····	
	39	Screw	BMZ30P120FMC		84	·····	
	40	Heat Sink	CNC3747		85	·····	
	41	Knob	CAA1250		86	·····	
	42	Screw	CBA1179		87	Screw	BMZ30P050FMC
	43	Screw	PMZ20P030FMC		88	Holder	CNC2218
	44	Holder Unit	CXA3998	◉	89	FM/AM Tuner Unit	CWE1228

Mark	No.	Description	Part No.	Mark	No.	Description	Part No.
	90	Holder	CNC3395		100	Screw	BMZ30P080FMC
	91	FM Front End	CWB1035		101	Lamp (Green)	CEL1207
	92	Insulator	CNM2105		102	Lamp	CEL1208
	93	Antenna Jack	CKX1010		103	Holder	CNV1906
	94	Plug	CKS1628		104	Holder	CNV1906
					105	Insulator	CNM3199
	95	Insulator	CNM2941				
◉	96	Tuner Amp Unit	CWM2680				
	97	Holder	CNC2913				
	98	Antenna Cable	CDH1128				
	99	Chassis Unit	CXA4191				

		M6300/EW	M6300SDK	M6300/IT	M6200/UC	M6250/ES
No.	Description	Part No.	Part No.	Part No.	Part No.	Part No.
	8 Spring	----	----	----	CBH1391	CBH1391
	9 Knob	----	----	----	CAA1272	CAA1272
	10 Grille Unit	CXA4147	CXA4146	CXA4147	CXA4148	CXA4149
	11 Button	CAC2821	CAC2821	CAC2821	CAC2932	CAC2821
	17 Button	CAC2815	CAC2815	CAC2815	CAC2938	CAC2938
	18 Button	CAC2816	CAC2816	CAC2816	CAC2939	CAC2939
	19 Button	CAC2828	CAC2828	CAC2828	CAC2933	CAC2828
	32 Cord	CDE3180	CDE3180	CDE3180	CDE3181	CDE3183
	34 Grille Cover	CNS2259	CNS2259	CNS2259	CNS2151	CNS2151
◉	37 Key Board Unit	CWM2697	CWM2697	CWM2700	CWM2699	CWM2699
	38 Grille Assy	CXA4177	CXA4178	CXA4281	CXA4180	CXA4181
	41 Knob	----	----	----	CAA1250	CAA1250
	45 Panel Unit	CXA4155	CXA4155	CXA4155	CXA4157	CXA4156
	62 Connector	CDE3378	CDE3378	CDE3378	CDE3165	CDE3165
	66 Plug	CKS1224	CKS1224	CKS1224	----	----
	71 Connector	----	----	----	CDE3171	CDE3171
	72 Volume	----	----	----	CCS1186	CCS1186
	79 Connector	----	CDE3170	----	----	----
	85 Plug	----	CKS1040	----	----	----
	86 Holder	----	CNC3577	----	----	----
◉	89 FM/AM Tuner Unit	CWE1228	CWE1227	CWE1228	CWE1225	CWE1226
◉	96 Tuner Amp Unit	CWM2680	CWM2681	CWM2762	CWM2683	CWM2684
	99 Chassis Unit	CXA4191	CXA4290	CXA4191	CXA4191	CXA4191
	101 Lamp	----	----	CEL1207	----	----
	102 Lamp	CEL1208	CEL1208	----	CEL1025	CEL1025
	103 Holder	CNV1906	CNV1906	----	CNV1906	CNV1906
	104 Holder	----	----	CNV1906	----	----

15. KEY BOARD UNIT EXPLODED VIEW

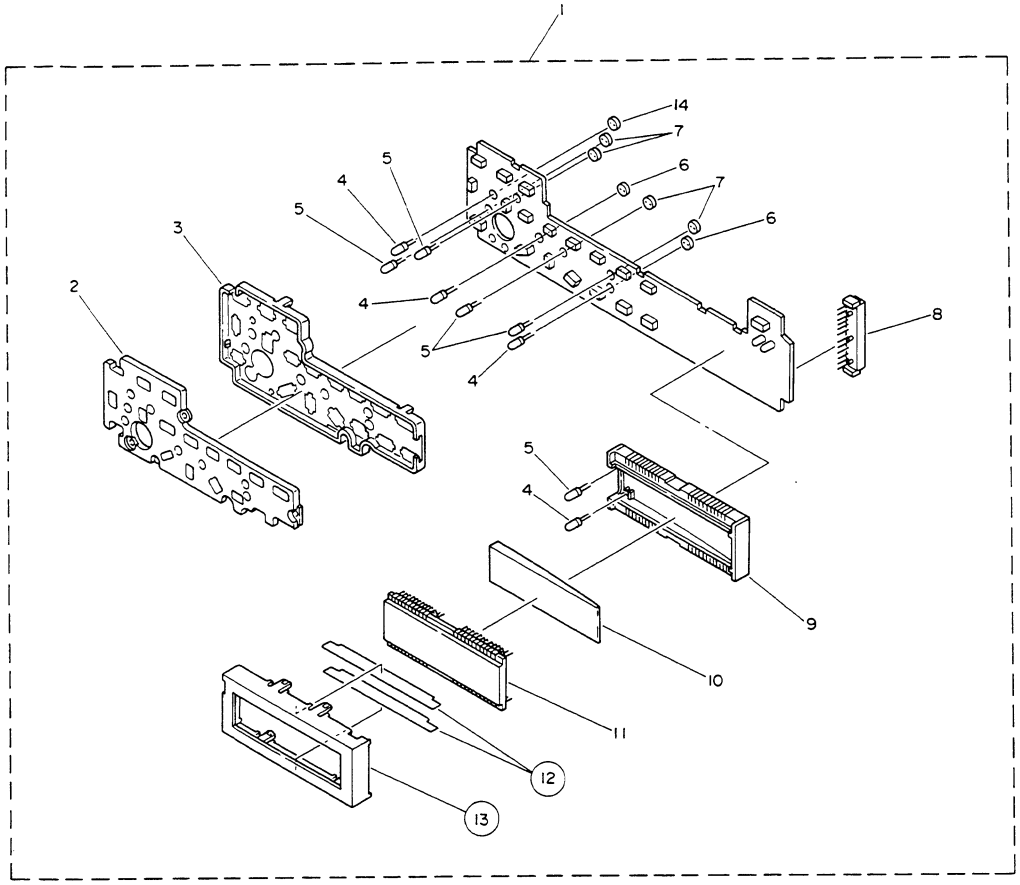


Fig. 19

•Parts List (KEH-M6300/EW)

Mark	No.	Description	Part No.	Mark	No.	Description	Part No.
◉	1	Key Board Unit	CWM2697		6	Bush	CNV1859
	2	Lens	CNV2688		7	·····	
	3	Holder	CNV2684		8	Plug	CKS1663
	4	Lamp	CEL1208		9	Holder	CNV2685
	5	·····			10	Lens	CNV2686
					11	LCD	CAW1124
					12	Insulator	CNM3051
					13	Holder	CNC3576
					14	Spacer	CNM1642

	M6300/EW	M6300SDK	M6300/IT	M6200/UC	M6250/ES
No. Description	Part No.	Part No.	Part No.	Part No.	Part No.
◉ 1 Key Board Unit	CWM2697	CWM2697	CWM2700	CWM2699	CWM2699
4 Lamp	CEL1208	CEL1208	----	CEL1025	CEL1025
5 Lamp	----	----	CEL1207	----	----
6 Bush	CNV1859	CNV1859	----	CNV1859	CNV1859
7 Bush	----	----	CNV1859	----	----
14 Spacer	CNM1642	CNM1642	----	CNM1642	CNM1642

16. CASSETTE MECHANISM ASSY EXPLODED VIEW

•Parts List

Mark No.	Description	Part No.	Mark No.	Description	Part No.
1	Gear	ENV1212	46	Gear	ENV1262
2	Gear	ENV1211	47	Spring	EBH1337
3	Gear	ENV1203	48	Arm	ENC1236
4	Washer	CBF1037	49	Lever Unit	EXA1173
5	Washer	CBF1038	50	Arm	ENC1237
6	Spring	EBH1338	51	Spring	EBH1335
7	Screw	JFZ17P035FNI	52	Shaft	
8	Shaft	ELA1259	53	Screw	JFZ20P025FNI
9	Gear	ENV1230	54	Collar	ELA1229
10	Gear	ENV1274	55	Screw	JFZ20P040FNI
11	Gear	ENV1264	56	Washer	EBF1015
12	Gear	ENV1204	57	Spring	EBH1372
13	Screw	JFZ17P018FNI	58	Collar	ELA1220
14	Collar	ELA1244	59	Lever	ENC1269
15	Arm	ENC1241	60	Spring	EBH1361
16	Arm	ENV1261	61	Gear	ENV1205
17	Sub Chassis Unit	EXA1169	62	Screw	CBA1054
18	Screw	BMZ20P025FMC	63	Screw	CBA1038
19	Spring(Black)	EBH1306	64	Screw	CBA1015
20	Tube		65	Plug	CKS1056
21	Gear Unit	EXA1159	66	Head Unit	EXA1163
22	Spring	EBH1308	67	P.C.Board	ENP1042
23	Holder	ENC1205	68	Switch	ESN1005
24	Lever	ENC1243	69	Spring	EBH1334
25	Lever	ENC1235	70	Gear	ENV1208
26	Spring	EBH1307	71	Spring	EBH1333
27	Real Unit	EXA1167	72	Arm	ENC1240
28	Washer	YE15FUC	73	Screw	BSZ20P040FMC
29	Arm	ENC1221	74	Arm	ENV1265
30	Spring	EBH1305	75	Spring	EBH1336
31	Spring	EBH1364	76	Arm Unit	EXA1171
32	Frame	ENC1204	77	Flywheel Unit	EXA1161
33	Arm	ENC1215	78	Gear	ENV1229
34	Shaft	ELA1251	79	Belt	ENT1020
35	Lever	ENV1222	80	Arm	ENV1206
36	Head Base Unit	EXA1203	81	Spring	EBH1317
37	Washer	YE12FUC	82	Chassis Unit	EXA1168
38	Solenoid	EXP1008	83	Screw	PMS26P025FUC
39	Spring	EBH1353	84	Pulley	ENV1207
40	Lever Unit	EXA1172	85	Gear	ENV1209
41	Bracket	ENC1239	86	Belt	ENT1018
42	Spring	EBH1339	87	Spring(Silver)	EBH1322
43	Screw	EBA1023	88	Lever(FF)	ENC1244
44	Screw	BMZ20P025FMC	89	Spring(Brown)	EBH1365
45	Spring	EBH1340	90	Motor Unit	EXA1162

• Cassette Mechanism Assy

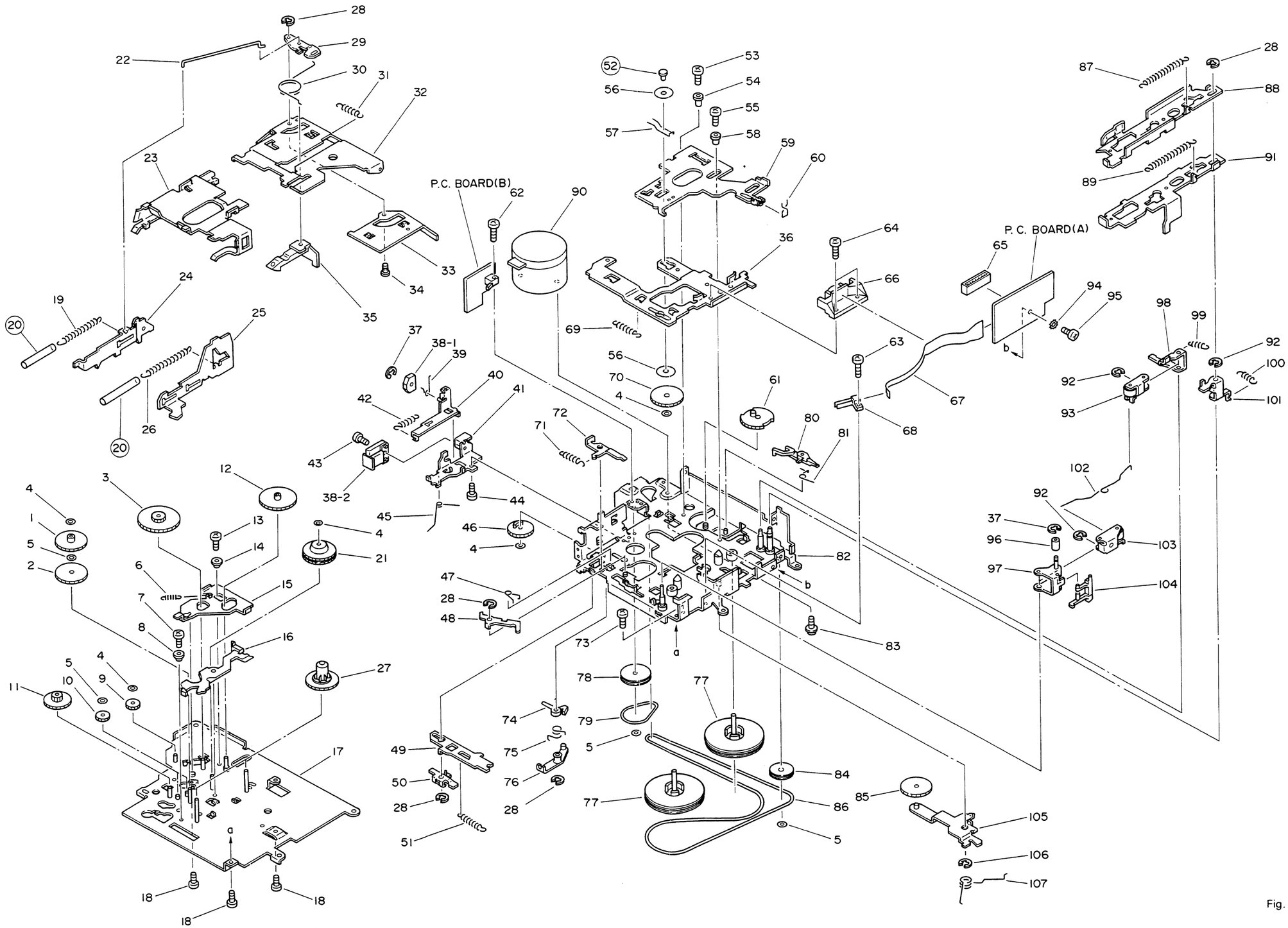


Fig. 20

Mark No.	Description	Part No.	Mark No.	Description	Part No.
91	Lever (REW)	ENC1245	101	Arm	ENC1264
92	Washer	YE20FUC	102	Spring	EBH1366
93	Pinch Roller Unit	EXA1193	103	Pinch Roller Unit	EXA1194
94	Washer	WH23FMC	104	Arm	ENV1227
95	Screw	BSZ23P040FMC	105	Arm Unit	EXA1155
96	Roller	ELA1247	106	Washer	YE30FUC
97	Arm Unit	EXA1166	107	Spring	EBH1310
98	Arm	ENC1266			
99	Spring	EBH1312			
100	Spring	EBH1311			

17. PACKING METHOD

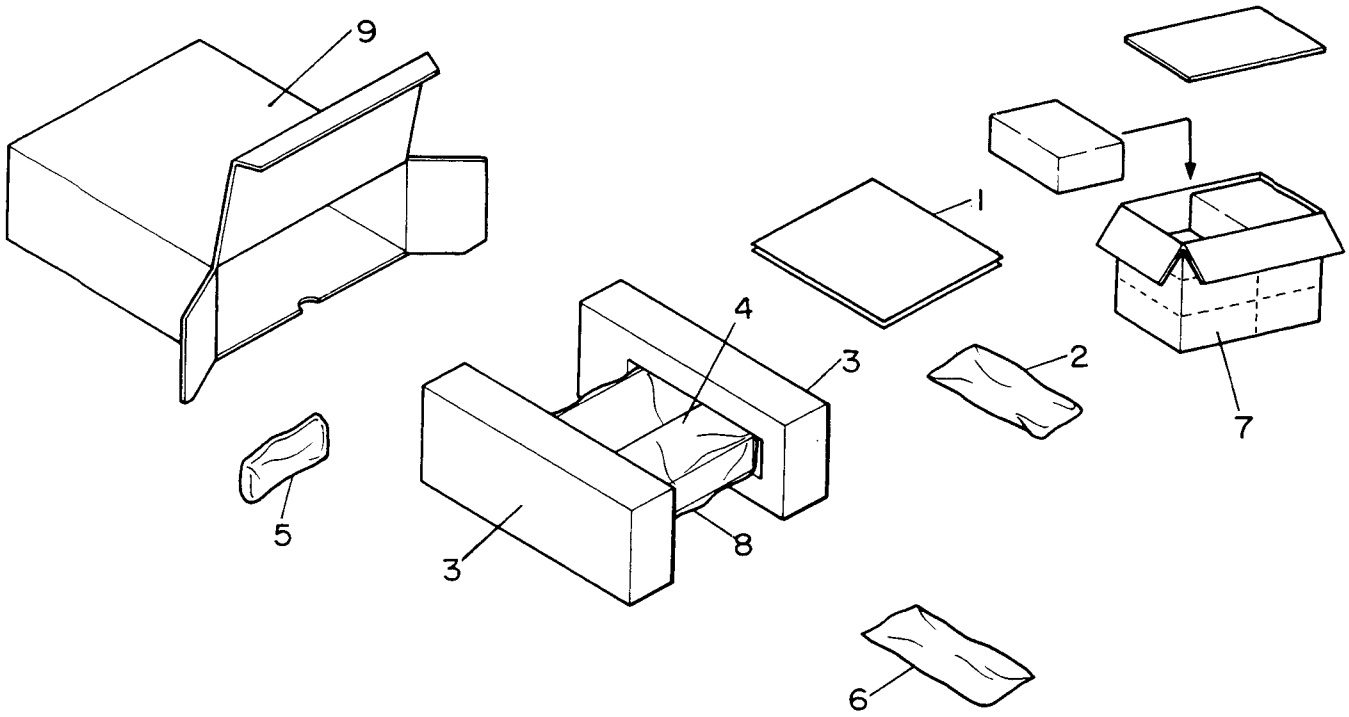


Fig. 21

•Parts List (KEH-M6300/EW)

* :Non spare part

Mark	No.	Description	Part No.	Mark	No.	Description	Part No.
	1-1	Owner's Manual	CRD1478		6-3	Cord	CDE1289
	1-2	·····			6-4	Handle(×2)	CNC3664
*	1-3	Card	CRY-062		6-5	Strap	CNF-111
	2	Cord	CDE3180		6-6	Bush	CNV1009
	3	Styrofoam	CHP1405		6-7	Nut(×2)	NF50FMC
*	4	Holder	CNC3342	*	7	Contain Box	CHL1993
	5	Case	CNS2269		8	Cover	CEG1092
	6	Accessory Assy	CEA1633		9	Carton	CHG1993
	6-1	Screw(×1)	CBA-102				
	6-2	Screw(×1)	CBA1002				

	M6300/EW	M6300SDK	M6300/IT	M6200/UC	M6250/ES
No. Description	Part No.	Part No.	Part No.	Part No.	Part No.
1-1 Owner's Manual	CRD1478	CRD1479	CRD1493	CRD1487	CRD1481
1-3 Installation Manual	----	CRD1491	CRD1491	----	----
* 1-4 Card	CRY-062	CRY-062	CRY-062	ARY1008	----
2 Cord	CDE3180	CDE3180	CDE3180	CDE3181	CDE3183
7 Contain Box	*CHL1993	*CHL1994	*CHL2013	*CHL1995	*CHL1996
9 Carton	CHG1993	CHG1994	CHG2013	CHG1995	CHG1996

Owner's Manual

Part No.	Model	Language
CRD1478	KEH-M6300/EW	English, French, German, Spanish, Portuguese
CRD1479	KEH-M6300SDK	French, German
CRD1493	KEH-M6300/IT	English, French, Italian
CRD1487	KEH-M6200/UC	English, French
CRD1481	KEH-M6250/ES	English, French, Spanish, Arabic

18. ELECTRICAL PARTS LIST

NOTE:

- *Parts whose parts numbers are omitted are subject to being not supplied.*
- *The part numbers shown below indicate chip components.*

Chip Resistor

RS1/8S□□□J, RS1/10S□□□J

Chip Capacitor (except for CQS.....)

CKS....., CCS....., CSZS.....

Unit Number :
Unit Name : FM/AM Tuner Unit (KEH-M6300SDK/WG)

MISCELLANEOUS

Mark	Circuit Symbol & No.	Part Name	Part No.
IC	51		PA4012B
IC	201		PA4017
Q	1	Chip Transistor	2SB709
Q	2	Chip Transistor	DTC124EK
Q	51	Chip Transistor	DTA114TK-94
Q	201		2SK435
Q	202		2SC2412K
Q	203 205	Chip Transistor	DTC124EK
D	201 204	Chip Diode	MA157-MR
D	205		SVC203-M1
L	1 51	Inductor	CTF1241
L	2	Inductor	CTF1086
L	101	Inductor	CTF1126
L	201	Inductor	CTF1084
L	203	Ferri-Inductor	LAU220K
L	204	Ferri-Inductor	LAU470K
L	205	Ferri-Inductor	LAU4R7K
T	51	Coil	CTE1021
T	52	Coil	CTE1022
T	201	Coil	CTB1020
T	202	Coil	CTB1004
T	203	Coil	CTB1040
T	204	Coil	CTE1037
T	205	Coil	CTE1038
T	206	Coil	CTE1039
CG	1		DSP-201M-S008
CF	51 52	Ceramic Filter	CTF-182
CF	201	Ceramic Filter	CTF1041
CF	202	Filter	CTF1085
X	151	Ceramic Resonator	CSS1055
X	201	Crystal Resonator	CSS1014
VR	1	Semi-fixed	CCP1019
VR	51 101 102	Semi-fixed 33kΩ (B)	VRTB4VS333
		FM Front End	CWB1035

RESISTORS

Mark	Circuit Symbol & No.	Part Name	Part No.
R	2 7		RS1/10S223J
R	3		RS1/10S124J
R	4		RS1/10S682J
R	5 13 63		RS1/10S0R0J
R	6 59 101		RS1/10S331J
R	10		RS1/10S560J
R	15		RS1/10S0R0J
R	54		RS1/10S472J
R	56 58 104		RS1/10S393J
R	57		RS1/10S562J
R	60		RS1/10S473J
R	61 105		RS1/10S332J
R	64		RS1/10S222J
R	102		RS1/10S822J
R	106		RS1/10S333J
R	107		RS1/10S102J
R	108		RS1/10S104J
R	111		RS1/10S123J
R	112		RS1/10S684J
R	151 152 153		RS1/10S222J
R	201		RS1/10S220J
R	202		RS1/10S681J
R	203 206 214		RS1/10S222J
R	204 213		RS1/10S473J
R	205 209		RS1/10S470J
R	207		RS1/10S822J
R	208 211 212		RS1/10S103J
R	210		RS1/10S682J
R	215		RS1/10S153J

CAPACITORS

Mark	Circuit Symbol & No.	Part Name	Part No.
C	1		CKSQYB102K50
C	2 3 104		CKSQYB103K50
C	4 59		CKSQYF473Z25
C	51		CKSQYF473Z25
C	52 53		CKSQYB223K25
C	54		CCSQSL101J50
C	55		CKSQYB102K50
C	56		CKSQYF104Z25
C	57		CSZAR33K35
C	58		CCSQCH060D50
C	60		CEALNP100M6R3
C	101		CKSQYB822K50
C	102		CKSQYB682K50
C	103		CKSQYB392K50
C	105		CEA2R2M50LL
C	106		CEA220M6R3LL
C	107 108		CKSQYB222K50
C	110		CEA010M50LL
C	111		CEA100M16LL
C	112		CEA0R1M50LL
C	151 152		CKSQYB273K25
C	153		CSZAR47M35L
C	154 155 156		CEA3R3M50LL
C	157		CEA101M10LS
C	201 223 228		CKSQYB103K25
C	202 212		CKSQYB332K50
C	203 215 216 219 226		CKSQYF473Z25
C	204 208 210		CKSQYB223K25
C	205		CCSQCH220J50
C	206 207		CCSQCH820J50
C	211		CEA2R2M50LL
C	213		CCSQCH390J50
C	217		CEA100M16LL
C	218		CEA2R2M35NPLL
C	220		CCSQCH430J50
C	221		CCSQCH100D50
C	222		CSZA010K35L
C	224		CEA470M16LL
C	225		CKSQYB333K25
C	227		CEA4R7M35LS
C	229		CEA470M16LS
C	230		CEA220M16LL

Unit Number :
Unit Name : Tuner Amp Unit(KEH-M6300SDK/WG)

Tuner Amp Unit
Consists of • Tuner Amp P. C. Board • SDK P. C. Board

MISCELLANEOUS

Mark	Circuit Symbol & No.	Part Name	Part No.
IC	350		TA8162SN
IC	351		CXA1102P
IC	451		KHA272
IC	501		TA8215H-A
IC	502		PD4302
IC	701		KHA142
IC	951		TA8214K
Q	351 352 551 552 807 808		DTC314TS
Q	451 452 453 454		DTC114TS
Q	455 509		DTA114TS
Q	456 800		DTA114ES
Q	457 458 502 506 950 958 959 962 975		DTC114TS
Q	501 504 703 963 969		2SC2458
Q	503		2SC2498
Q	505		2SK330
Q	510		2SC3113
Q	550 553 976		DTC114YS
Q	554 805 806 965		2SA1048
Q	701		DTB123YS
Q	702		DTC114WS
Q	801 802		2SC2458
Q	917		2SD2037
Q	918 978	Chip Transistor	DTC114TK
Q	951 952 953		DTB123YS
Q	954		DTC114TS
Q	955 956		DTC314TS
Q	957 961 964		DTA143ZS
Q	960 977		2SB1243
Q	965		DTC114TS
Q	974		2SB772
D	350 440 505 506 507 511		1SS133
D	450		1S1555
D	451 452 453 454 501 502 550 551 552		1SS133
D	503 700		HZS3R0EB2
D	553 907		HZS9R1JB2
D	908		ERA15-02VH
D	951		HZS5R6JB2
D	952		HZS7R5JB2
D	953 958 959		ERA15-02VH
D	954		HZS6R8JB2
D	957		ERC04-02F
L	501	Ferri-Inductor	LAU2R2M
L	952	Ferri-Inductor	LAU330K
IB	501		CWW1302
IB	505		CWW1240
IB	951		CWW1301
IB	952		CWW1128
IB	953		CWW1292
IB	954		CWW1291
X	501	Crystal Resonator	CSS1011
X	701	Ceramic Resonator	CSS1019
VR	351 352	Semi-fixed 33kΩ (B)	VRTB6VS333
S	2	Switch(Clear)	CSG1012
IL	952	Lamp(Orange)	CEL1208
EF	953 954 955		CCG1003
BZ	902	Buzzer	CPV1013

RESISTORS

Mark	Circuit Symbol & No.	Part Name	Part No.
R	351 352		RS1/10S104J
R	353 354		RS1/10S133J
R	355 356		RS1/10S183J
R	357 358		RS1/10S334J
R	359 360		RS1/10S181J

Mark	Circuit Symbol & No.	Part Name	Part No.
R	361 362 502 522		RS1/10S222J
R	366 501 504 955 957 958		RS1/10S103J
R	367 537 954		RS1/10S473J
R	369		RD1/4PS154JL
R	370		RS1/10S154J
R	371 372		RS1/10S473J
R	375		RS1/10S0R0J
R	379		RS1/10S0R0J
R	380 381 822 873		RS1/10S0R0J
R	382 383 384 614 615 616 988 989 990		RS1/8S0R0J
R	385 386 486 618 992		RS1/8S0R0J
R	389 824 993		RS1/8S0R0J
R	390		RS1/8S0R0J
R	392		RS1/10S104J
R	393		RS1/8S0R0J
R	451 452 509 961		RD1/4PS473JL
R	453 454		RS1/10S102J
R	455 456 524 527 529 805 806		RS1/10S473J
R	457		RS1/8S223J
R	458		RD1/4PM223J
R	459 460		RS1/10S563J
R	461 462		RS1/10S333J
R	469 470 475 476 541 542 547		RS1/10S0R0J
R	473 474		RS1/10S183J
R	479 483 605 987		RS1/10S0R0J
R	480 482		RS1/10S0R0J
R	485 606 607 608 610 611 613		RS1/8S0R0J
R	487 520 521 815 816 920 985 986		RS1/10S102J
R	503 563 819 820 970		RS1/10S223J
R	505 801 802		RS1/10S221J
R	506		RD1/4PS222JL
R	507		RD1/4PS392JL
R	508		RS1/10S823J
R	510 516		RS1/10S472J
R	511 534		RS1/8S104J
R	512		RD1/4PM102J
R	513		RS1/10S152J
R	514		RS1/10S182J
R	515 519 956		RS1/10S101J
R	517		RS1/10S331J
R	518		RS1/10S821J
R	523 564 703 921 973		RS1/10S222J
R	525		RS1/10S474J
R	526		RD1/4PM102J
R	530 531		RS1/10S681J
R	532 533		RS1/8S681J
R	538		RS1/10S563J
R	539		RS1/10S0R0J
R	540		RS1/10S104J
R	543 544 545 546 549 601 602 821		RS1/10S0R0J
R	548		RS1/10S102J
R	550		RS1/10S391J
R	553		RD1/4PS392JL
R	554		RD1/4PM392J
R	555 556		RD1/4PS471JL
R	557 558 559 560		RD1/4PS4R7JL
R	561 562		RS1/10S152J
R	701		RS1/8S473J
R	702		RS1/10S684J
R	800		RS1/10S470J
R	803 804		RS1/10S223J
R	807 808 817 818		RS1/10S471J
R	809 810		RS1/10S681J
R	811 812		RS1/10S133J
R	813 814		RS1/10S472J
R	922		RS1/8S472J
R	923		RS1/10S472J
R	950		RS1/8S0R0J
R	951		RS1/8S681J
R	952 971		RD1/2PS681JL
R	953		RS1/8S223J
R	959 965		RS1/10S102J
R	960 977 978 979 980 981		RS1/8S103J
R	969		RS1/10S1R0J
R	974		RD1/4PS152JL
R	999		RD1/4PM104J

CAPACITORS

Mark	Circuit Symbol & No.	Part Name	Part No.
C	350		CEA101M10LS
C	351 352		CCSQCH681J50
C	353 354 363 701 705 914 954 957		CEA470M16LS
C	355 356 510 514		CKSQYB103K50
C	357 361 362 955 958		CEA100M16LS2
C	358 380 381 451 452 453 454 457 458 706		CEA4R7M35LS
C	359 360		CEA010M50LS2
C	364 555		CKSQYF104Z25
C	365		CEA101M10LS
C	367 368		CEAR68M50LS2
C	383 384	4.7μF/35V	CCH1016
C	455 953		CEA470M16L2
C	456		CEA100M16LS2
C	500		CASAQ4R7M10
C	501		CCG1008
C	502 504 505 507 520 702		CKPYY103M16L
C	509 526		CKSYB102K50
C	511		CKPYB101K50L
C	512		CKSYB681K50
C	513		CCSQCH101J50
C	515	4.7μF/16V	CCH1005
C	516		CEAR47M50LS2
C	517	1000μF/6.3V	CCH1112
C	518		CCSQCH100D50
C	525		CCSQCH090D50
C	527		CKSQYF104Z25
C	528		CKSQYB473K25
C	550		CEA101M10L2
C	551 552		CEHAS4R7M35
C	553 554 805 806 962		CKSQYB102K50
C	556		CEHAQ101M10
C	557 558		CEHAQ470M25
C	559 561 562		CQEA224J63
C	560		CQEA224J63
C	563		CEA0R1M50LS2
C	564		CEA472M16L2
C	600		CASAQ100M10
C	703		CQMA683J50LL
C	704		CEAR33M50LS2
C	800		CEA221M10L2
C	801 802 807 808		CEA4R7M35LS
C	803 804		CEALNP100M16
C	913		CEA220M16LS
C	951	470μF/10V	CCH1019
C	952 963		CKSQYB473K25
C	956		CCG1008
C	961		CEA2R2M50LS2
C	964		CKSQYB103K50

Unit Number :
Unit Name : Key Board Unit(KEH-M6300SOK/WG)

MISCELLANEOUS

Mark	Circuit Symbol & No.	Part Name	Part No.
IC	901		S-80740AH
IC	902		PD4285
IC	903		LC7582A
D	901 902 903 904 905	Chip Diode	DCC010
L	901	Ferri-Inductor	LAU101K
X	901	Ceramic Resonator	CSS1050
IL	908 909 910 911 913	Lamp(Orange)	CEL1208
S	901 902 903 904 905 906 907 908 909 910 911 912 913 914 915 916 917 918 919	Switch	CSG-253
		LCD	CAW1124

RESISTORS

Mark	Circuit Symbol & No.	Part Name	Part No.
R	901 902 903 904 905		RS1/8S103J
R	906		RS1/10S104J
R	907		RS1/10S473J
R	908		RS1/10S103J
R	909 910 911 912 913 914 915 916 917 918		RS1/10S471J

CAPACITORS

Mark	Circuit Symbol & No.	Part Name	Part No.
C	901		CEA470M6R3LS
C	902		CKSQYF473Z25
C	903		CCSQCH331J50
C	904 905		CKSQYB103K50
C	906 907		CCSQCH221J50
C	908 909 910 911 912		CKSQYB152K50

Unit Number :
Unit Name : P.C.Board(A)

Mark	Circuit Symbol & No.	Part Name	Part No.
S	2	Switch(FWD/REV)	ESH1003

Unit Number :
Unit Name : P.C.Board(B)

Mark	Circuit Symbol & No.	Part Name	Part No.
D	1		F1SR35-100A
S	3	Switch(Tape/Tun)	ESH1004
SO	1	Solenoid	EXP1008

Miscellaneous Parts List

Mark	Circuit Symbol & No.	Part Name	Part No.
S	1	Switch(Mute)	ESN1005
HD	1	Head Unit	EXA1163
M	1	Motor Unit	EXA1162

Tuner Amp Unit

	M6300/EW	M6300SDK	M6300/IT	M6200/UC	M6250/ES
IC351	CXA1102P	CXA1102P	CXA1102P	----	----
IC502	PD4302	PD4302	PD4302	PD4343A	PD4343A
IC701	----	KHAC02	----	----	----
Q453, 454	----	DTC114TS	----	----	----
Q506	DTC114TS	DTC114TS	DTC114TS	----	----
Q701	----	DTB123YS	----	----	----
Q702	----	DTC114WS	----	----	----
Q703	----	2SC2458	----	----	----
Q917	----	2SD2037	----	----	----
Q977	2SB1243	2SB1243	----	2SB1243	2SB1243
Q978	DTC114TK	DTC114TK	----	DTC114TK	DTC114TK
Q979	----	----	2SB1243	----	----
Q980	----	----	DTC114TK	----	----
D506	1SS133	1SS133	1SS133	----	----
D508	----	----	----	1SS133	----
D509	----	----	----	----	1SS133
D511	----	1SS133	----	----	----
D700	----	HZS3R0EB2	----	----	----
D907	----	HZS9R1JB2	----	----	----
VR1	----	----	----	CCS1186	CCS1186
VR351, 352	VRTB6VS333	VRTB6VS333	VRTB6VS333	----	----
X701	----	CSS1019	----	----	----
IL951	----	----	CEL1207	----	----
IL952	CEL1208	CEL1208	----	CEL1025	CEL1025
TC501	----	----	----	CCG-070	CCG-070
R300	----	----	----	RD1/4PS472JL	RD1/4PS472JL
R359, 360	RS1/10S181J	RS1/10S181J	RS1/10S181J	RS1/10S151J	RS1/10S151J
R366	RS1/10S103J	RS1/10S103J	RS1/10S103J	----	----
R367	RS1/10S473J	RS1/10S473J	RS1/10S473J	----	----
R369, 370	RS1/10S154J	RS1/10S154J	RS1/10S154J	RS1/10S222J	RS1/10S222J
R375, 381	RS1/10S0R0J	RS1/10S0R0J	RS1/10S0R0J	----	----
R377	----	----	----	RS1/10S0R0J	RS1/10S0R0J
R378	----	----	----	RS1/10S0R0J	RS1/10S0R0J
R379	RS1/10S0R0J	RS1/10S0R0J	RS1/10S0R0J	----	----
R384, 389	RS1/8S0R0J	RS1/8S0R0J	RS1/8S0R0J	----	----
R387, 388	----	----	----	RS1/8S472J	RS1/8S472J
R392	RS1/10S104J	RS1/10S104J	RS1/10S104J	----	----
R473, 474	RS1/10S183J	RS1/10S183J	RS1/10S183J	RS1/10S223J	RS1/10S223J
R540	RS1/10S104J	RS1/10S104J	RS1/10S104J	----	----
R606, 610, 611, 992	----	RS1/8S0R0J	----	----	----
R615	RS1/8S0R0J	RS1/8S0R0J	RS1/8S0R0J	----	----
R701	----	RS1/8S473J	----	----	----
R702	----	RS1/10S684J	----	----	----
R703	----	RS1/10S222J	----	----	----
R923	----	RS1/10S472J	----	----	----
R973	RS1/10S222J	RS1/10S222J	----	RS1/10S222J	RS1/10S222J
R974	RS1/10S152J	RS1/10S152J	----	RS1/10S152J	RS1/10S152J

	M6300/EW	M6300SDK	M6300/IT	M6200/UC	M6250/ES
R975	----	----	RS1/8S223J	----	----
R976	----	----	RD1/2PS681JL	----	----
R998	----	----	----	RD1/4PS222JL	----
C358	CEA4R7M35LS	CEA4R7M35LS	CEA4R7M35LS	----	----
C359, 360	CEA010M50LS2	CEA010M50LS2	CEA010M50LS2	JUMPER	JUMPER
C361, 362	CEA100M16LS2	CEA100M16LS2	CEA100M16LS2	JUMPER	JUMPER
C363	CEA470M16LS	CEA470M16LS	CEA470M16LS	----	----
C364	CKSQYF104Z25	CKSQYF104Z25	CKSQYF104Z25	----	----
C365	CEA101M10LS	CEA101M10LS	CEA101M10LS	----	----
C367, 368	CEAR68M50LS2	CEAR68M50LS2	CEAR68M50LS2	----	----
C516	CEAR47M50LS2	CEAR47M50LS2	CEAR47M50LS2	----	----
C525	CCSQCH090D50	CCSQCH090D50	CCSQCH090D50	----	----
C701, 705, 914	----	CEA470M16LS	----	----	----
C702	----	CKPYY103M16L	----	----	----
C703	----	CQMA683J50LL	----	----	----
C704	----	CEAR33M50LS2	----	----	----
C706	----	CEA4R7M35LS	----	----	----
C913	----	CEA220M16LS	----	----	----

FM/AM Tuner Unit

	M6300/EW, IT	M6300SDK	M6200/UC	M6250/ES
Q3	----	----	2SA1162	----
Q51	----	DTA114TK	----	----
D11, 12	----	----	1SV128A-BB	----
VR1	CCP1019	CCP1019	CCP1025	CCP1019
L2	CTF1086	CTF1086	----	----
L11, 12	----	----	CTF1065	----
L101	CTF1126	CTF1126	CTF1170	CTF1126
L201	CTF1084	CTF1084	CTF1026	CTF1026
R3	RS1/10S124J	RS1/10S124J	RS1/10S683J	RS1/10S124J
R8	----	----	RS1/10S331J	----
R9	----	----	RS1/10S223J	----
R10	RS1/10S560J	RS1/10S560J	RS1/10S0R0J	RS1/10S0R0J
R11	----	----	RS1/10S104J	----
R12	----	----	RS1/10S470J	----
R13	RS1/10S0R0J	RS1/10S0R0J	----	RS1/10S0R0J
R14	----	----	RS1/10S0R0J	RS1/10S0R0J
R58	RS1/10S393J	RS1/10S393J	RS1/10S223J	RS1/10S393J
R60	----	RS1/10S473J	----	----
R61	RS1/10S332J	RS1/10S332J	----	----
R101	RS1/10S331J	RS1/10S331J	RS1/10S471J	RS1/10S471J
R151, 152	RS1/10S222J	RS1/10S222J	RS1/10S152J	RS1/10S152J
C11, 12, 13, 14	----	----	CCSQCH220J50	----
C15	----	----	CKSQYB223K25	----
C57	CSZAR33K35	CSZAR33K35	CEAR68M50LS2	CSZAR33K35
C101	CKSQYB822K50	CKSQYB822K50	CKSQYB392K50	CKSQYB392K50
C151, 152	CKSQYB273K25	CKSQYB273K25	CKSQYB563K25	CKSQYB563K25

Key Board Unit

	M6300/EW	M6300SDK	M6300/IT	M6200/UC	M6250/ES
IL902, 904-907, 912	----	----	CEL1207	----	----
IL908-911, 913	CEL1208	CEL1208	----	CEL1025	CEL1025

PIONEER
The Art of Entertainment

Service Manual

ORDER NO.
CRT1328

CASSETTE MECHANISM ASSEMBLY

CX-197

NOTE

- **This service manual describes operation of the cassette mechanism incorporated in models listed in the table below.**
- **When performing repairs use this manual together with the specific manual for the model under repair.**

Model	Service Manual	Cassette Mechanism Assembly
KE-1700B/IT KE-1700SDK/WG KE-1730B/EW KE-2700B/IT KE-2700SDK/WG KE-2730B/EW	CRT1325	EXK1710
KE-1700QR/UC KE-2303QR/UC KE-2750QR/ES	CRT1327	EXK1710
KE-2033/UC KE-2033/XSG/UC KE-2828/XSG/UC KE-2828/ES, UC	CRT1331	EXK1710
KE-3838/UC, ES KE-3838/XSG/UC KE-3838/XML/UC	CRT1332	EXK1710
KE-1700B/XML/IT	CRT1336	EXK1710
KE-1730B/XIB KE-1730B/XML/EW KE-1730B/XSG/EW	CRT1337	EXK1710
KE-2630B/XIB KE-2730B/XIB	CRT1340	EXK1710

Model	Service Manual	Cassette Mechanism Assembly
KE-1700QR/XML/UC	CRT1339	EXK1710
KE-3700SDK/WG KE-3730B/EW KE-3700B/IT	CRT1326	EXK1720
KE-2700QR/UC KE-3700QR/UC KE-3750QR/ES	CRT1327	EXK1720
KE-4848/ES, UC KE-4848/XML/UC KE-4848/XSG/UC	CRT1330	EXK1720
KE-250/US KE-3033/UC KE-3033/XSG/UC	CRT1332	EXK1720
KE-3730B/XIB	CRT1338	EXK1720
KE-4500QR/US	CRT1327	EXK1750
KE-350/US	CRT1330	EXK1750

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XQ103

1. DISASSEMBLY

Note: Always use new washer and E washer at the time of reassembling.

● How to Remove the Belt and Motor

1. Remove screw A fixing the FR lever. (Fig.1)
2. Remove three screws B fixing the sub-chassis unit. Move the unit first in Direction A, then in B direction, and lift it upward for removal. (Fig.2)
3. The belt can now be removed. (Fig.3)
4. Remove two screws C. The motor can be removed. (Fig.3)

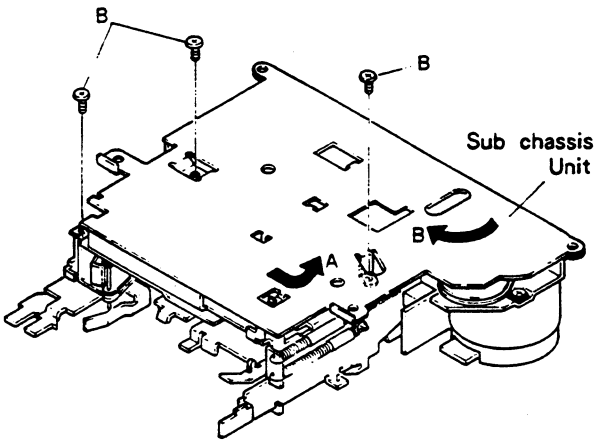


Fig. 2

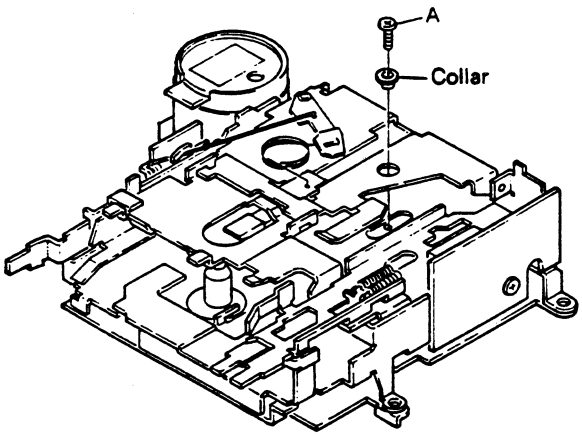


Fig. 1

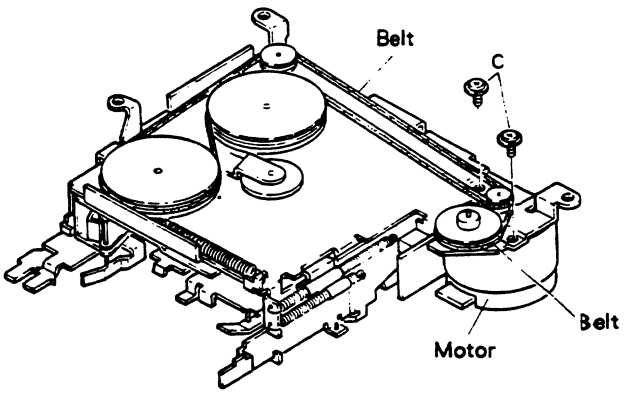


Fig.3

● How to Remove the Pinch Roller Unit and Head

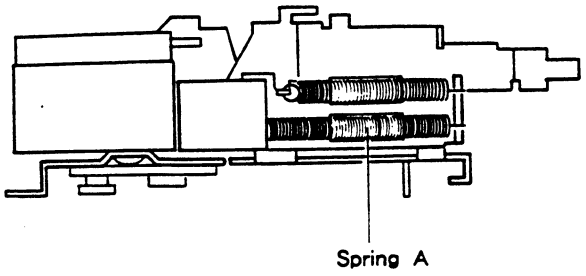


Fig. 4

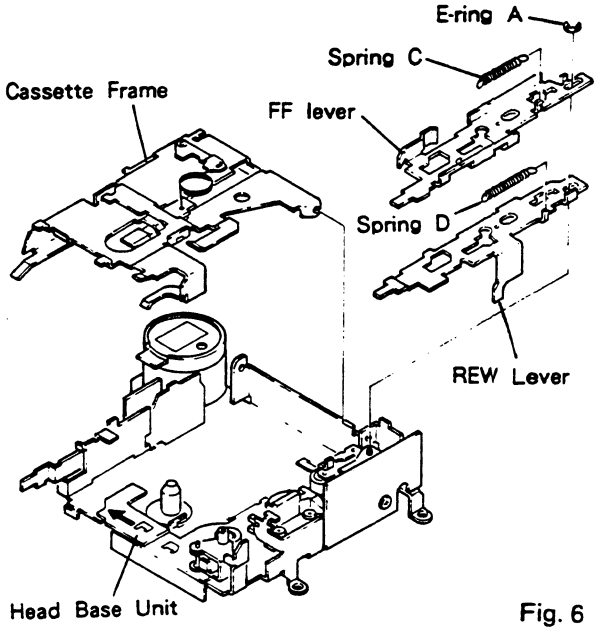


Fig. 6

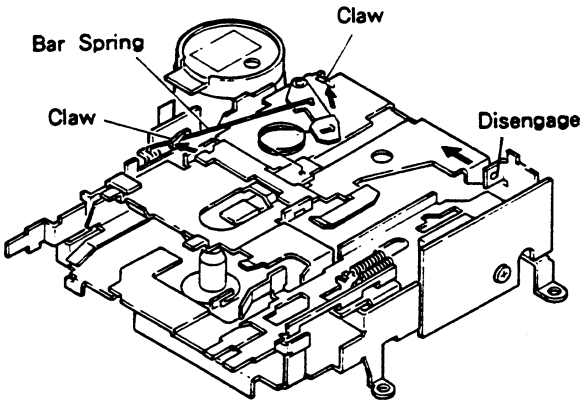


Fig. 5

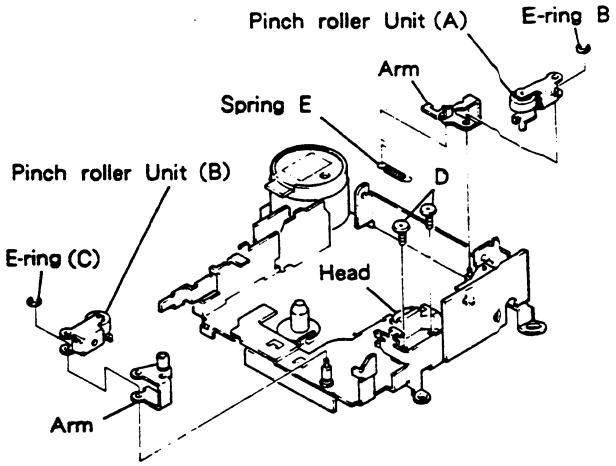


Fig. 7

1. Remove spring A. (Fig.4)
2. Extend claws (2 points). (Fig.5)
3. Remove bar Spring. (Fig.5)
4. Disengage projection by moving in a direction of arrow mark. (Fig.5)
5. The cassette frame is removed. (Fig.6)
6. Remove springs C and D. (Fig.6)
7. Remove E-ring A. (Fig.6)
8. Remove FF/REW levers. (Fig.6)
9. Move head base unit forward. (Fig.6)
10. Remove spring E. (Fig.7)
11. Remove E-ring B. The pinch roller unit (A) can be removed. (Fig.7)
12. Remove E-ring C. The pinch roller unit (B) can be removed. (Fig.7)
13. Remove two screws D. The head can be removed. (Fig.7)

2. ADJUSTMENT

2.1 CHECK POINTS OF CASSETTE MECHANISM

Confirm the following items when replacing parts of the cassette mechanism.	■ Tape speed deviation: $3{,}000\,^{+90}_{-30}$Hz $(4.76\text{cm/s}\,^{+3}_{-1}\,\%)$ Using an NCT-111, measure the speed at the start and end of winding and take the maximum value. If values indicated by the pointer vary considerably, adjust to 70% of the minimun and maximum values. Measuring time shall be 5 — 6 seconds.	■ Wow and flutter: Less than 0.2% (WRMS) Using an NCT-111, measure the wow and flutter at the start and end of winding and take the maximum value. If values indicated by the pointer vary considerably, adjust to 70% of the minimum and maximum values. Measuring time shall be 5 — 6 seconds.
■ Fast forward and rewinding time: 100 — 120 seconds Using a C-60, set to fast forward and rewind, and measure the time with a stop watch.	■ Winding torque: 35 — 65g • cm Using a cassette type torque meter (100 g•cm), measure the minimum value while in the play mode. Measuring time shall be 2.5 — 6 seconds.	■ F.F. torque: 70 — 120g • cm Using a cassette type torque meter (120 g•cm), measure the value when the tape stops in the F.F. mode.
■ REW torque: 70 — 120g • cm Using a cassette type torque meter (120 g•cm), measure the value when the tape stops in the REW mode.	■ Back tension torque: 2 — 6g • cm After setting in the REW mode without loading a cassette tape for 5 minutes, measure the back tension torque in the play mode, using a cassette type torque meter.	■ Cassette loading force: Less than 0.7 kg Push the center of the cassette and measure the force with a tension meter (3 kg).

2.2 AZIMUTH ADJUSTMENT

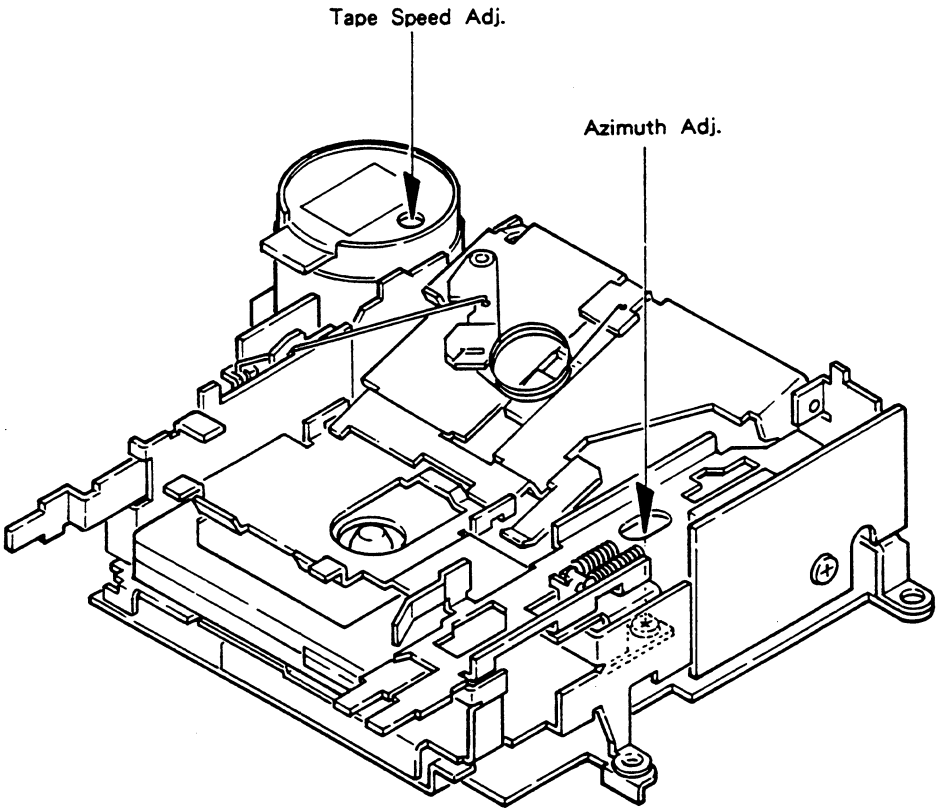


Fig. 8

● To Adjust (EXK1750)

1. Play "A" side of NCT-110 (10kHz, – 10dB). Adjust the screw for maximum output in forward and reverse directions.
2. Play "B" side in forward and reverse directions to confirm adjustment.

2.3 TAPE SPEED ADJUSTMENT

1. Reproduce NCT-111 (3kHz, – 10dB). Adjust the semifixed resistor so that frequency counter shows 3010Hz (+80Hz, – 40Hz).

3. MECHANISM DESCRIPTION

● Loading operation

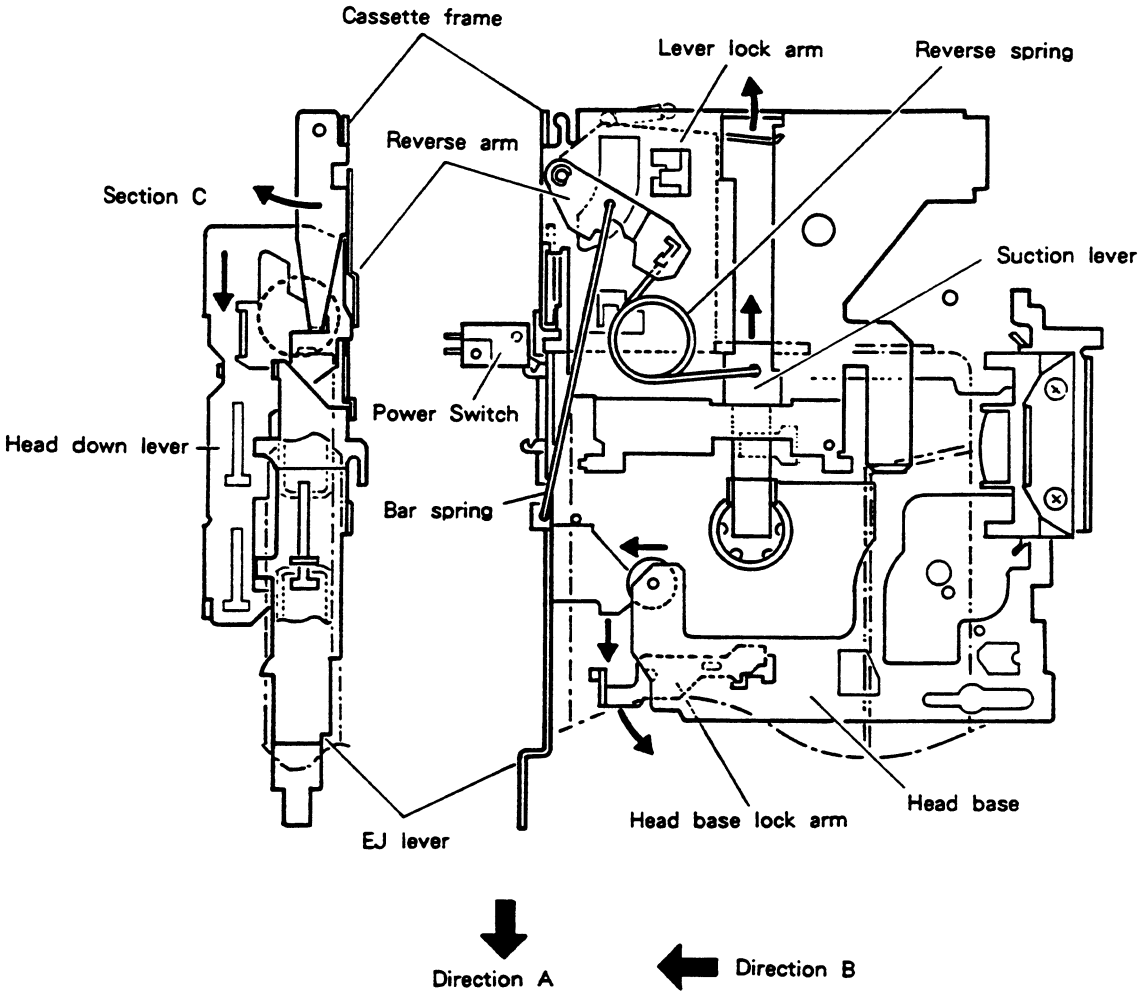


Fig. 9

1. A cassette tape, when inserted, pushes a suction lever.
   The reverse spring rotates to move past the reverse point. Then, the cassette is drawn by a force of a reverse spring (suction operation).
2. After suction, the lever lock arm is pressed to be unlocked.
3. The head down lever is unlocked and the lever moves in Direction A.
4. While moving, the EJ lever turns ON the power switch.
5. The cassette frame engaged to the section C of the head down lever turns. (Cassette drop operation)
6. At the stroke end, the head down lever turns the head base lock arm.
7. A Stopper of the head base lock arm is released, and the head base moves forward (Direction B).

● MS Operation (EXK1720, EXK1750)

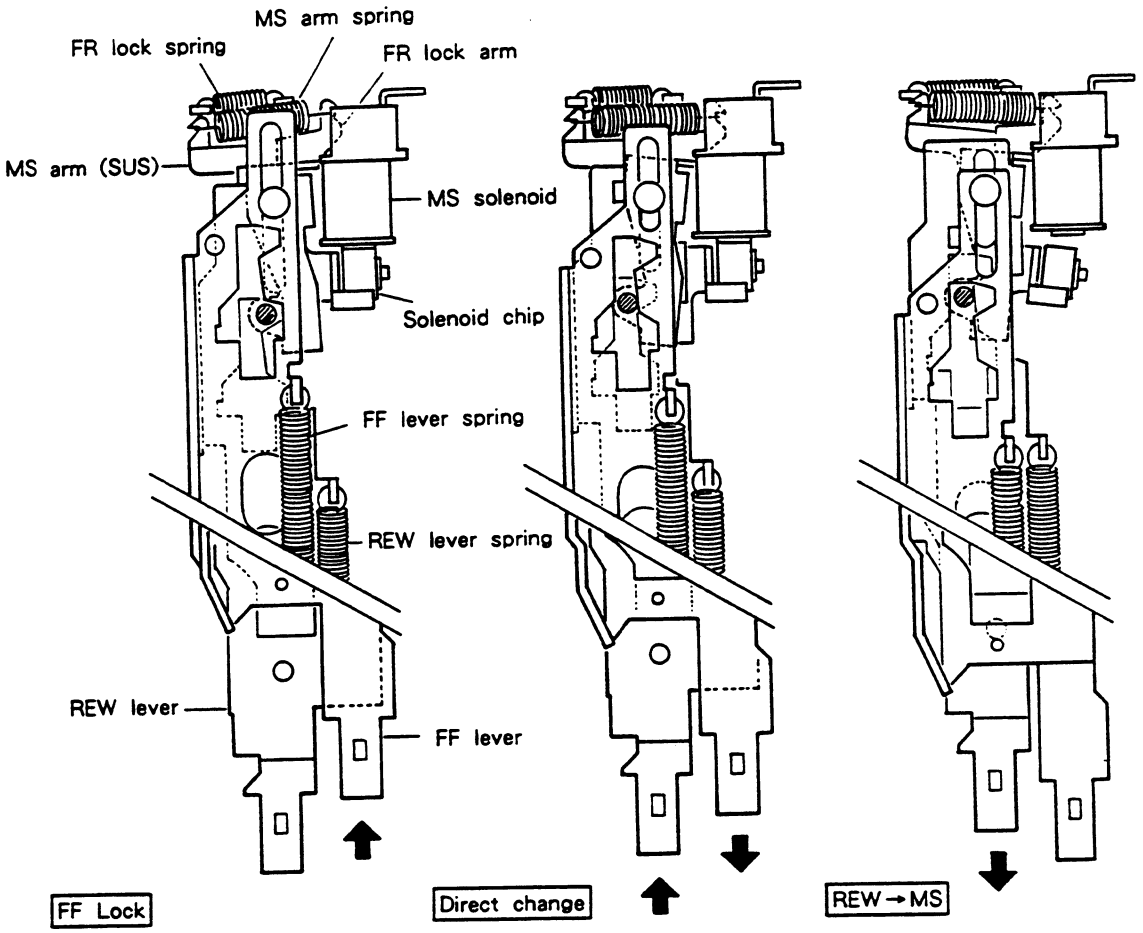


Fig. 10

Fig. 11

Fig. 12

1. The MS solenoid is normally energized to attract the solenoid chip during play and F/R operation. The solenoid chip applies counterclockwise force to the MS arm, thereby putting the FR lock arm into rotation via the MS arm spring. The MS lock shaft of FR lock arm unit catches a taper in a different hole of the FF (or REW) lever to lock the FF (or REW) lever.
2. In case of direct change, pressing the unlocked FF or REW lever causes the lever taper to turn the FR lock arm clockwise. This in turn presses the MS arm spring and FR lock spring to release the locked lever.
3. When the no recording section is caught and the power supply to the solenoid is cut off, the solenoid loses the attraction force and disables locking of the F/R lever. As a result, the F/R lever is unlocked. (This unlocking occurs because the force to retain the lever cannot be generated by the FR lock spring only)

● Direction Changeover Operation

(1) FWD play operation

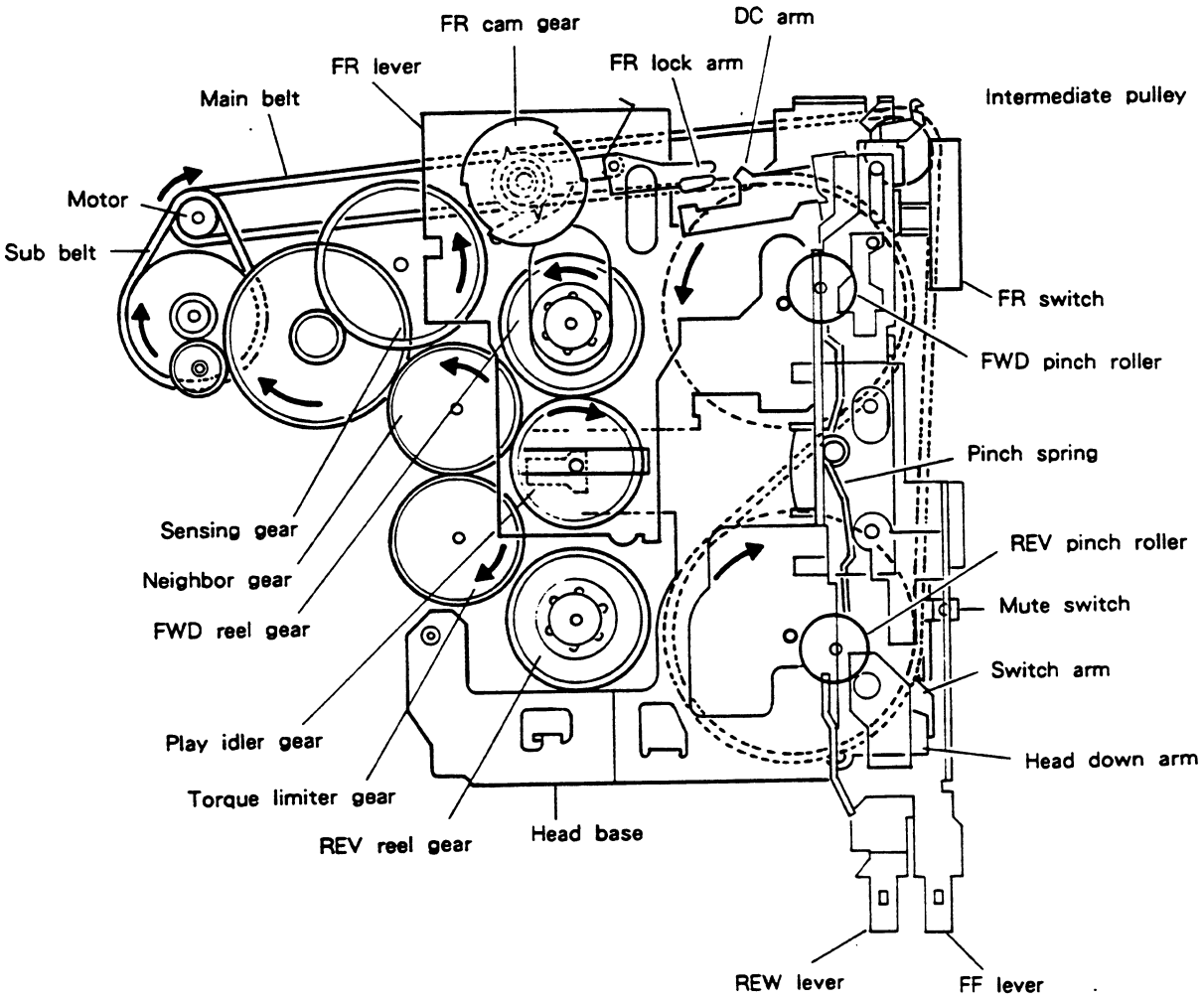


Fig. 13

When the FR lever is in the top position, the pinch spring is in the upper position to press the FWD pinch roller. The FR switch also moves upward and its reaction causes downward force on the FR lever. The spring attached to the FR lever applies upward force to the play idler gear from above to engage it with the neighbor gear and FWD reel gear.

The tape is driven in the FWD direction by a running motor and taken up by the REV reel gear via the torque limiter gear.

(2) Direction change operation

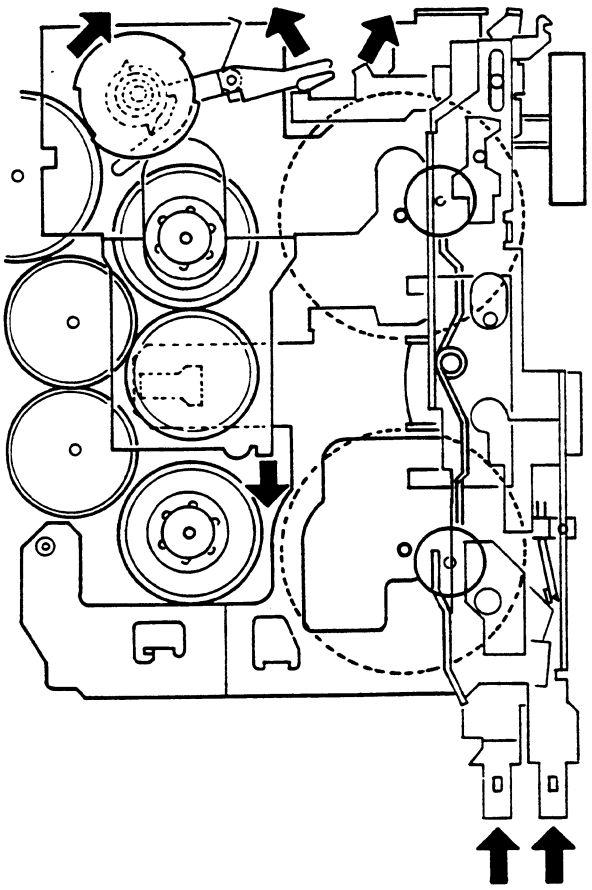


Fig. 14

The direction is changed by pressing FF and REW levers simultaneously. The DC arm turns along a cam groove of FF and REW levers to turn the FR lock arm. As the FR lever applies force from above downward, the FR cam gear turns and the notch meshes with the sensing gear.
As a result, the FR lever moves downward.
When FF and REW levers are kept pressed, the lock arm contacts the outside of the FR cam gear to prevent changeover between FWD and REV. Pressing FF and REW levers also cause the mute switch to be turned ON. In other words, muting is valid while FF and REW levers are pressed. (Fig.14)

(3) REV play operation

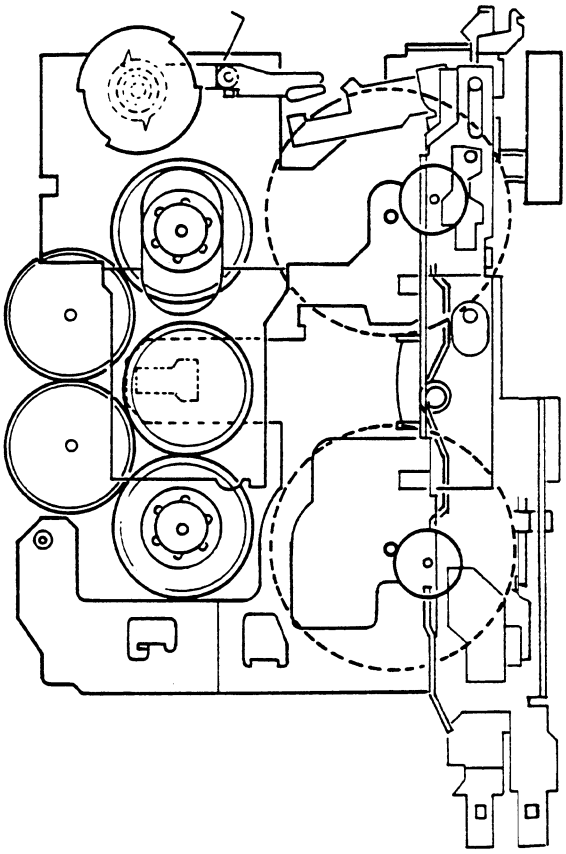


Fig. 15

Moving the NR lever up and down causes changeover among the pinch roller, FR switch, and play idler gear. With FF and REW levers having been returned, the FR lock arm returns to the normal lock position and locks the gear when the FR gear completes an one-half turn. The mute arm also returns to turn OFF the mute switch. The reverse play state is thus obtained. (The same applies to changeover from REV to FWD.)

● FF/REW Operation

(1) FWD play operation

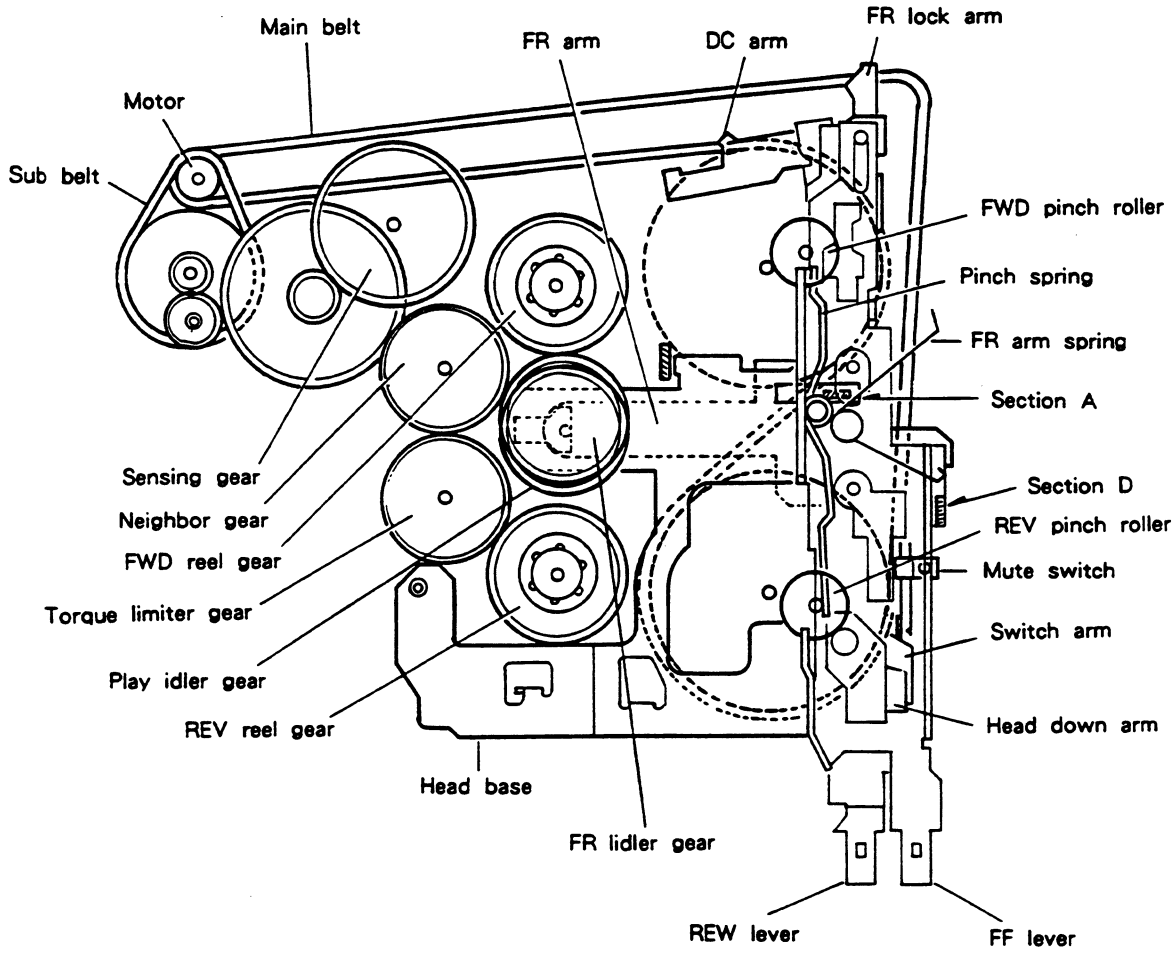


Fig. 15

In the FWD (REV) play state, the head base is fixed by a chassis stopper. The pinch spring presses the pinch roller into contact with a capstan to drive forward the tape. The REV reel gear takes up the tape via the torque limiter gear. In this case, the FR idler gear on the FR arm is centered by Section A of the head base and thus not rotating.

(2) FF Operation

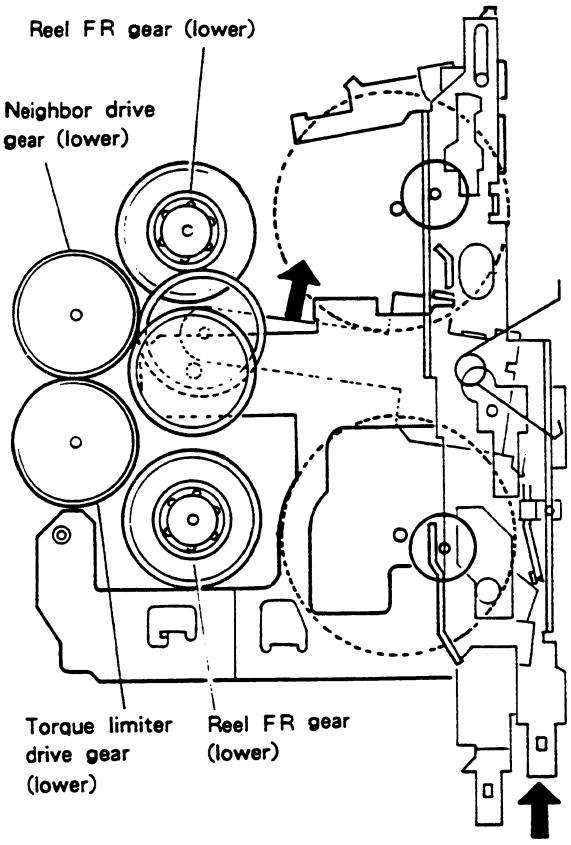


Fig. 17

FF operation is obtained by pressing and locking the FF lever. As the FF lever is pressed, the switch arm turns to turn ON the mute switch. The head base is moved backward along the FF lever cam groove.

As the head base moves backward to release the pinch roller from the capstan, the play idler gear is simultaneously disengaged from the reel gear. As the head base moves backward, the FR arm centered by Section A is put into rotation by the FR arm spring to engage with the FWD side FR gear.

The FF lever is locked by the FR lock arm and performs the FF operation. (Fig.17)

(3) REW operation

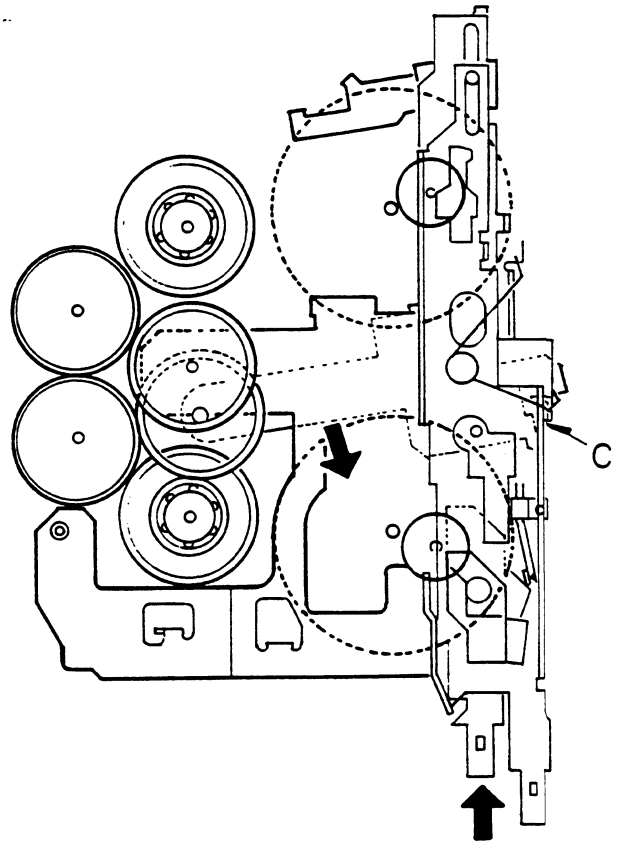


Fig. 18

Similar to the case of FF operation, pressing the REW lever causes the mute switch to be turned ON.

Simultaneously with release of the pinch roller from the capstan, the play idler gear is disengaged from the reel gear.

Section D of the REW lever presses a movable side of the FR arm spring, thereby engaging the FR gear to the FR gear on the REV side.

The REW lever is locked by the lock arm, performing the REW operation. This operation is cancelled when Section C is turned by the lever return spring. (Fig.18)

● Sensing Operation

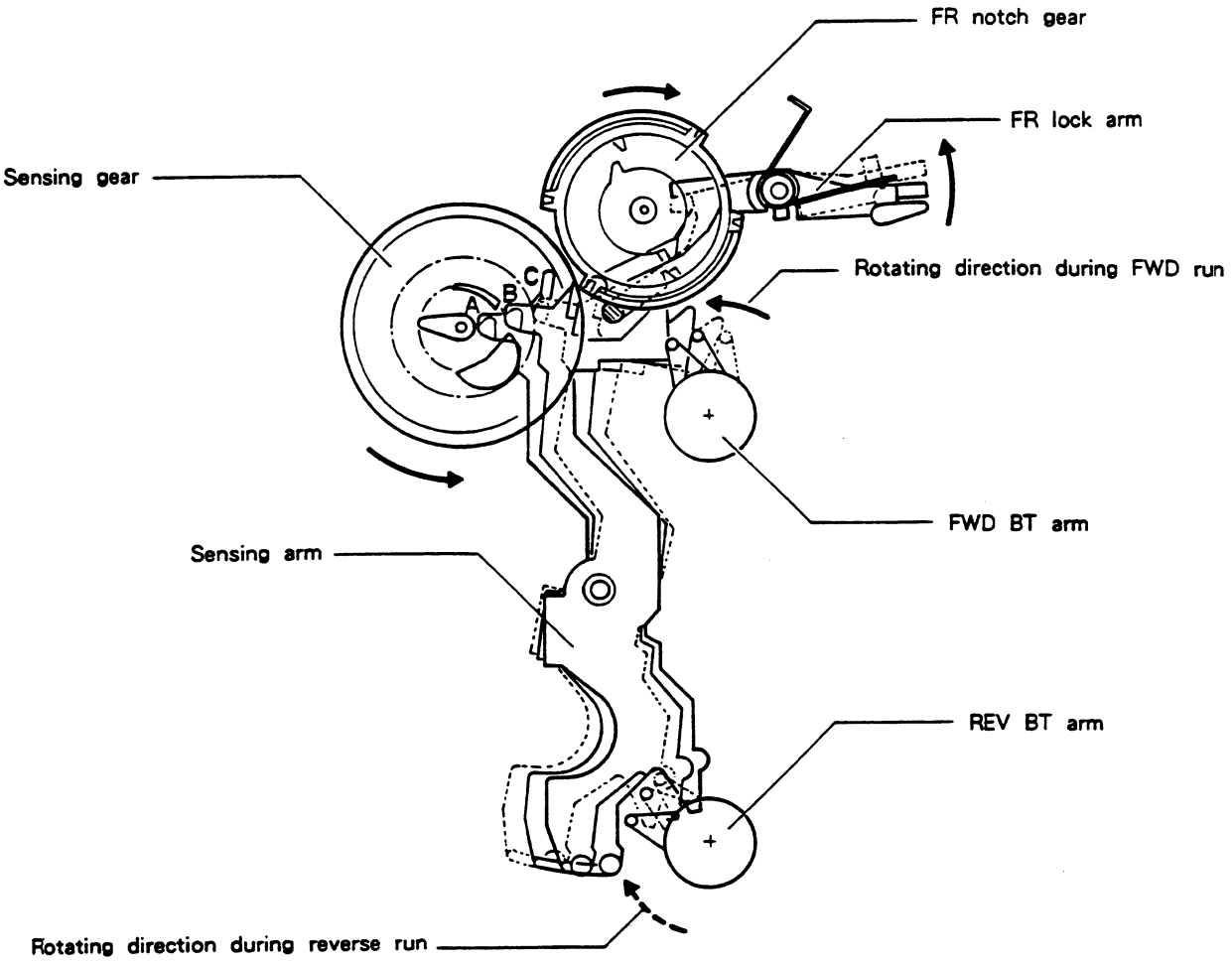


Fig. 19

1. During tape run: The sensing arm keeps oscillation between A and B under a force of the FWD BT arm (or REV BT arm).

2. At end of tape: The force of the BT arm is lost. The sensing arm stops at Position B, then pushed out to Position C by a crescent cam of the sensing gear.

3. Change of run direction:
The FR lock arm turns counter-clockwise along with movement of the sensing arm. The FR notch gear is unlocked and begins to turn.

● ATSC Opeeration

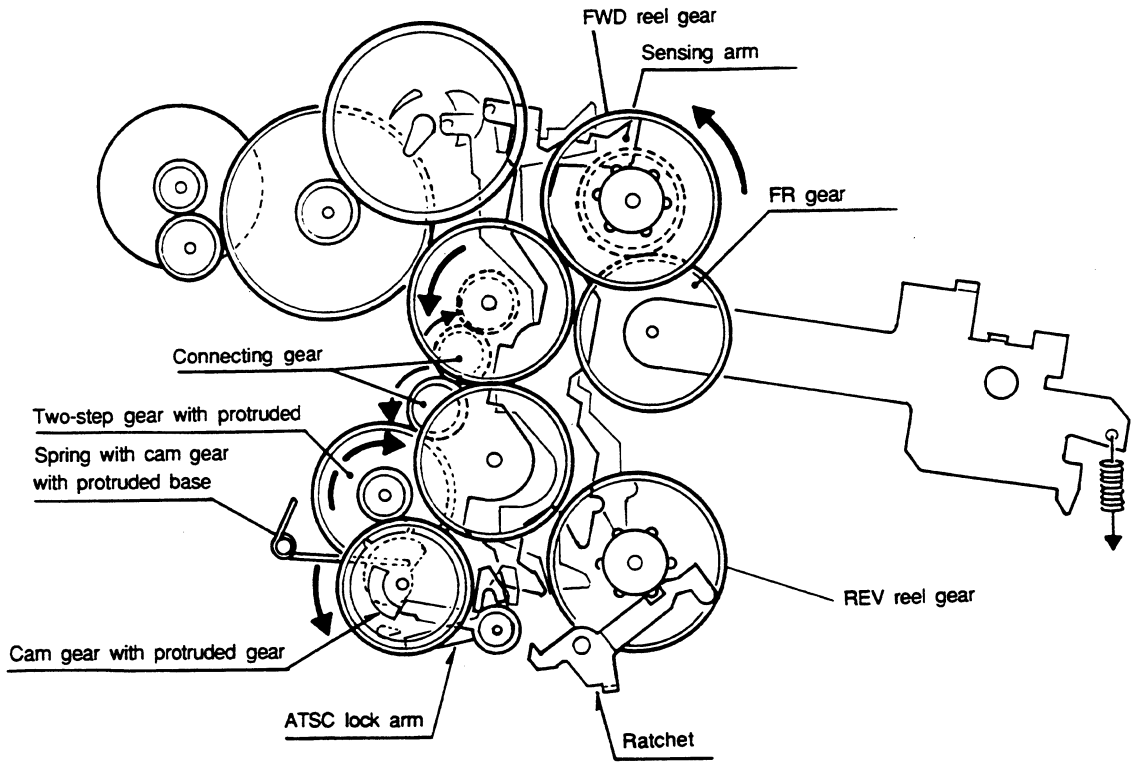


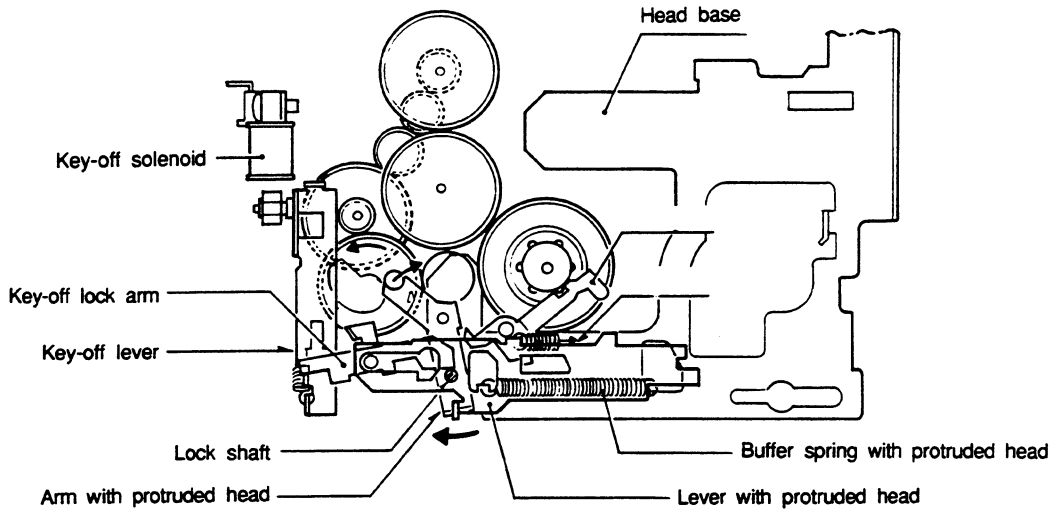
Fig. 18

1. At the position for releasing the head table, the FR gear is meshed with the FWD reel gear. Because the ratchet in the REV reel gear stops rotating, the tape must be wound up until no slack exist.

2. Because the rotation stops when no slack exists in the tape, sensing is performed. The sensing arm presses the ATSC lock arm, and the lock of the cam gear with protruded head gets out of position. Then, the cam gear is made to rotate.

● Key-off Operation

Release Condtion



Play Condition

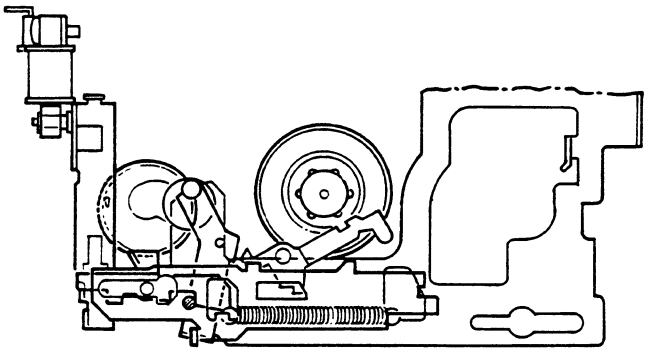


Fig. 19

1. Thrusting head: The arm with protruded head is rotated by the rotation of the cam gear with protruded head, and the lever with protruded head is pushed out. Because the lever with the protruded head and head base are connected by the buffer spring with protruded head, the head base moves forward.

2. Lock for head base:
When the lever with protruded head moves forward, the lock shaft caulked by the lever with protruded head shifts. Thus, the key-off lock arm can rotate, and the key-off lever reaches the key-off solenoid by force of a spring, and becones attached. (Although escape power works on the key-off lock arm by force of the head return spring, he solenoid maintains it.)

3. Key-off: The key-off lock arm is rotated by the power of the head return spring when the key-off solenoid is switched off, and the lever with protruded head and head base move back together.

● EJECT Operation

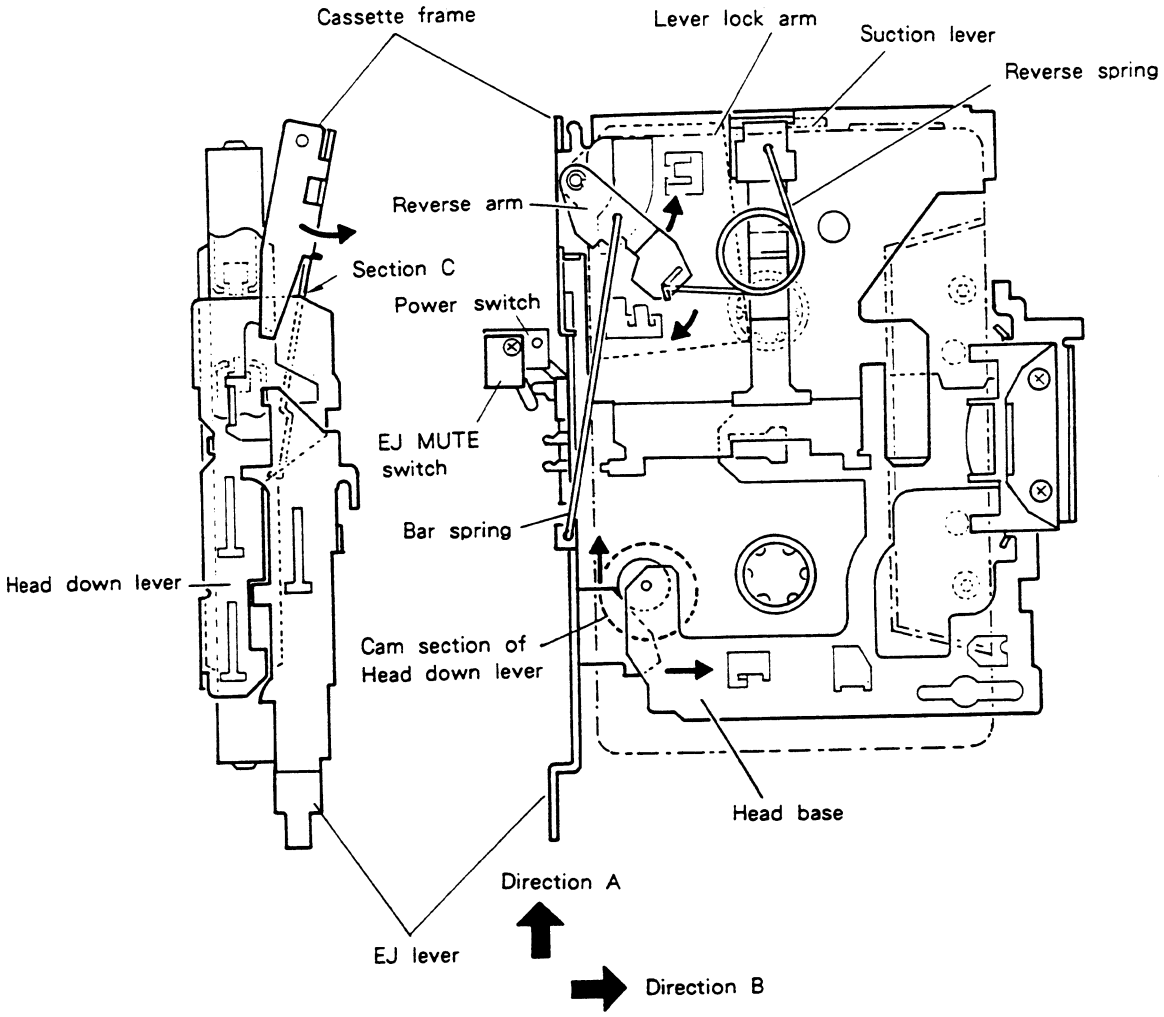


Fig. 20

1. Push the EJ lever in Direction A by hand (EJ MUTE SW ON) At the same time, the head down lever slides in Direction A.
2. The cam section of the head down lever returns the head base in Direction B (head base down operation).
3. Section C of the cassette frame is pushed up by the stroke of the head down lever (push-up operation).
4. The reverse arm is driven in a direction of arrow mark via bar spring by the EJ lever stroke.
5. The reverse spring passes through the reverse position to eject the cassette tape (eject operation).
6. With the EJ lever over-stroking, the lever lock arm can be rotated and locks the head down lever.
7. When released, the EJ lever returns and is stopped by the head down lever.

● EJECT Operation

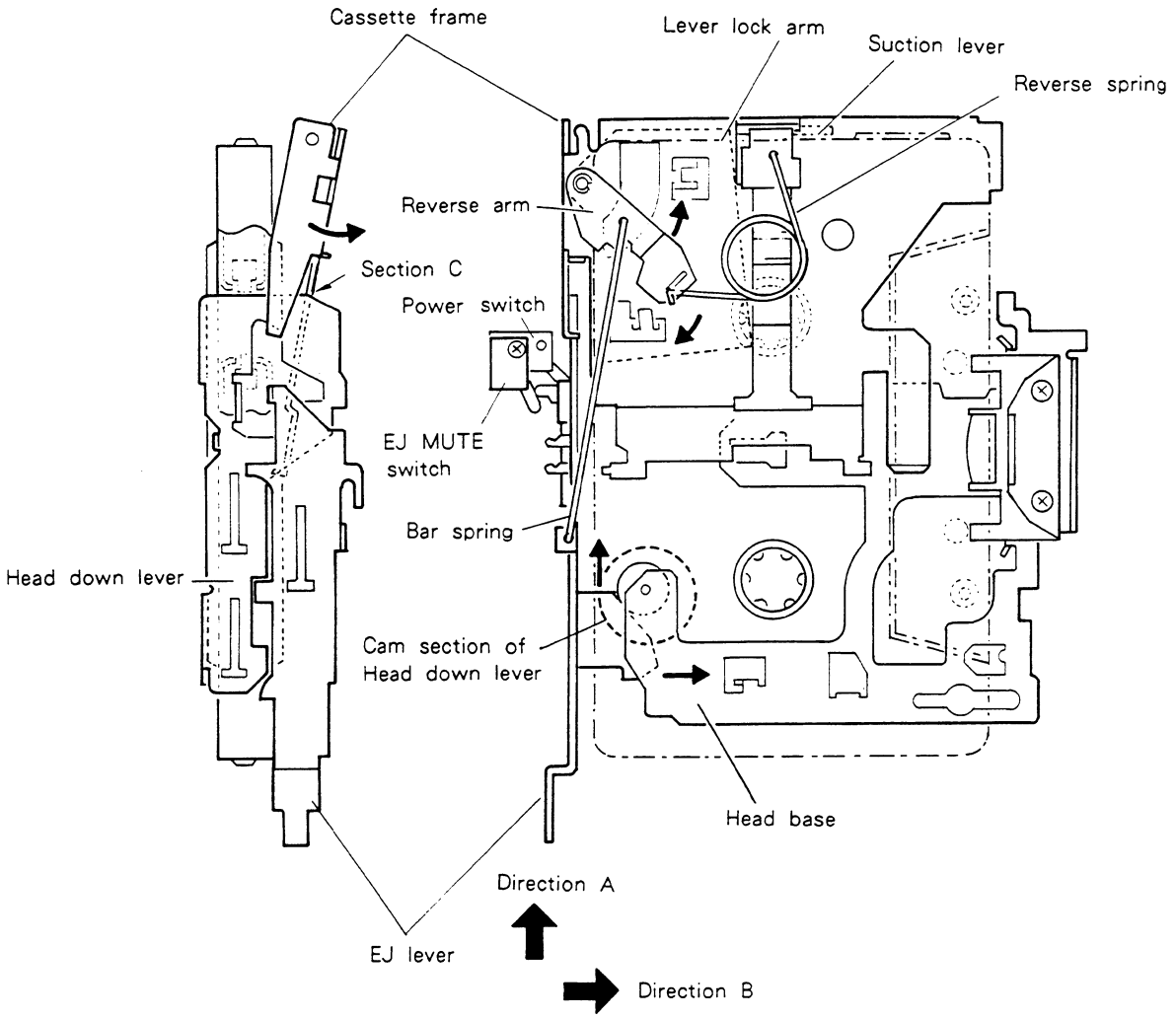


Fig. 20

1. Push the EJ lever in Direction A by hand (EJ MUTE SW ON) At the same time, the head down lever slides in Direction A.
2. The cam section of the head down lever returns the head base in Direction B (head base down operation).
3. Section C of the cassette frame is pushed up by the stroke of the head down lever (push-up operation).
4. The reverse arm is driven in a direction of arrow mark via bar spring by the EJ lever stroke.
5. The reverse spring passes through the reverse position to eject the cassette tape (eject operation).
6. With the EJ lever over-stroking, the lever lock arm can be rotated and locks the head down lever.
7. When released, the EJ lever returns and is stopped by the head down lever.

PIONEER

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